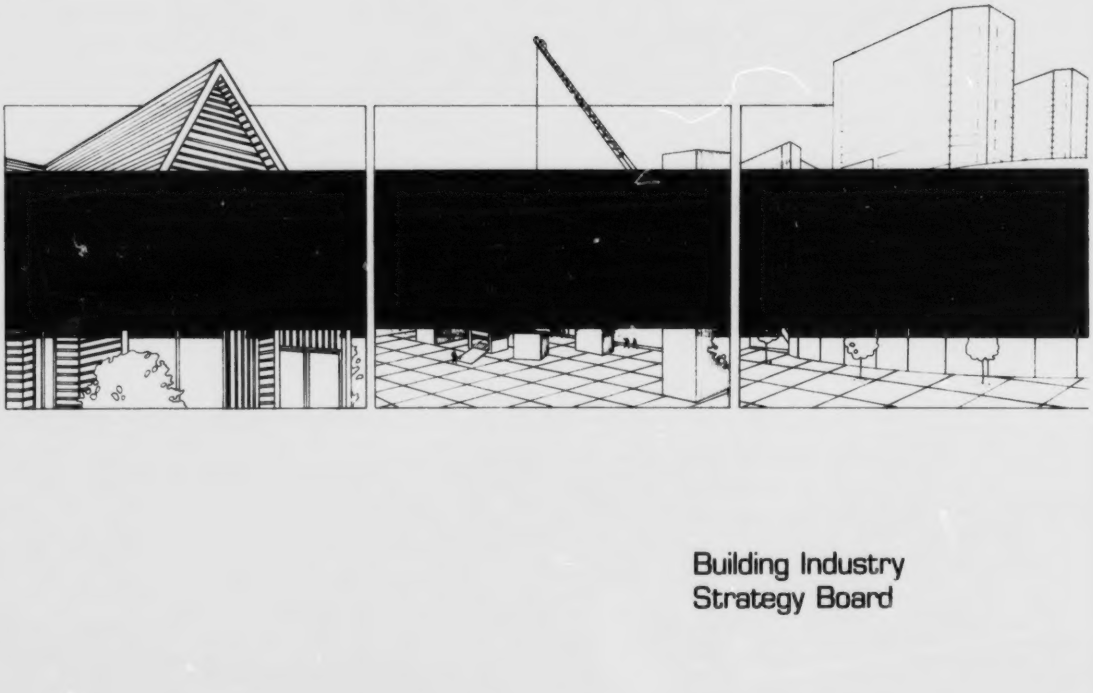
FROM FRAGMENTATION TO CONSOLIDATION



Building Industry
Strategy Board

FROM FRAGMENTATION
TO
CONSOLIDATION

PREPARED BY THE
BUILDING INDUSTRY SECRETARIAT

MARCH 1989

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FOREWORD

The Building Industry Strategy Board (BIS Board) was created to tackle a problem fundamental to Ontario's building industry: the industry's inability to act in a concerted manner because of its fragmentation.

Through bringing together representatives of all facets of the industry, the BIS Board nurtured cohesiveness. Issues that affected the industry's labour, owner/management and government sectors were defined and addressed. This report highlights the results as well as what remains unresolved.

Attracting disparate industry groups, focusing their energies and fostering positive change was the foundation for the BIS Board's many successes. The process of developing a coordinated industrial approach was often difficult and is not yet complete. The benefits however, were large and are still clear. Through this publication the industry should continue to see the value of moving **"From Fragmentation to Consolidation"**.

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Senior Consultant .... Mr. Peter Choi

Senior Consultant .... Mr. John Medwell

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Manager .... Mr. Donald Beveridge

FROM FRAGMENTATION TO CONSOLIDATION

INTRODUCTION

In 1987 the Ontario building industry spent over $23 billion. More than 550,000 people were employed and in excess of $1.5 billion in provincial taxes was collected (Figures 1 - 5). On the surface the industry seems untroubled and destined for a healthy future. This, however is not the case.

The Ontario building industry faces an array of problems: declining efficiency, lack of investment in R & D, loss of share in domestic and export markets and over-regulation by government. The industry does not communicate well with its member parts or with government. It has not recognized itself as an industry nor has it halted the decline in the quality and quantity of entrants into its workforce.

The industry also faces problems externally. Changes in population growth and composition as well as declines in birth rates and immigration do not bode well for the industry. Demographic predictions are for a decline in residential, commercial, industrial and institutional construction through the 1990's.

This combination of internal and external challenges existed at the inception of the Building Industry Strategy in 1985 and, largely, still exists today.

The Building Industry Strategy was designed by industry, labour and government. Its purpose was to help the industry begin to contend with the

THE BUILDING AND CONSTRUCTION INDUSTRY

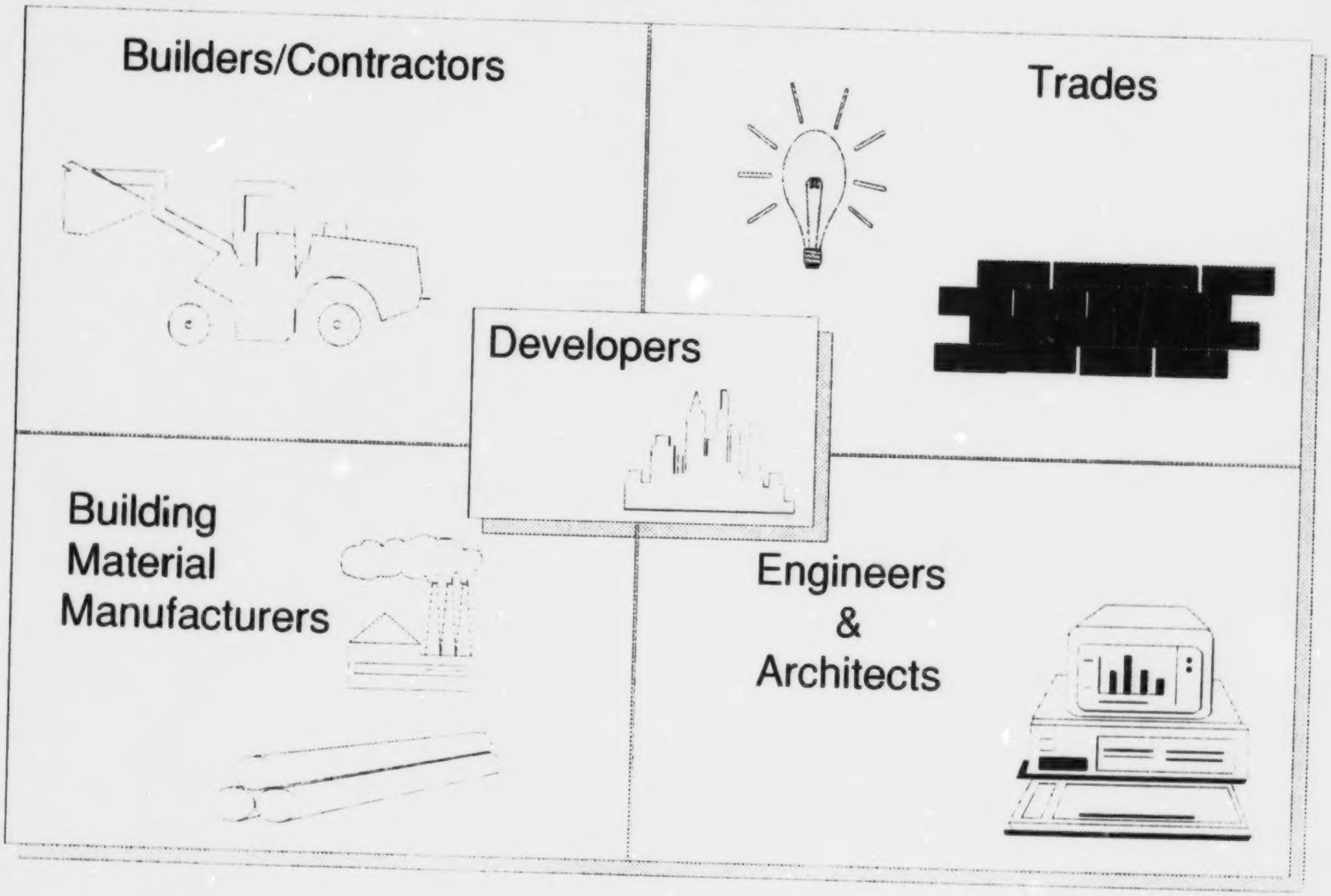

Builders/Contractors
Trades
Developers
Building Material Manufacturers
Engineers & Architects

FIGURE 1

BUILDING EXPENDITURES - ONTARIO
RESIDENTIAL AND I.C.I.

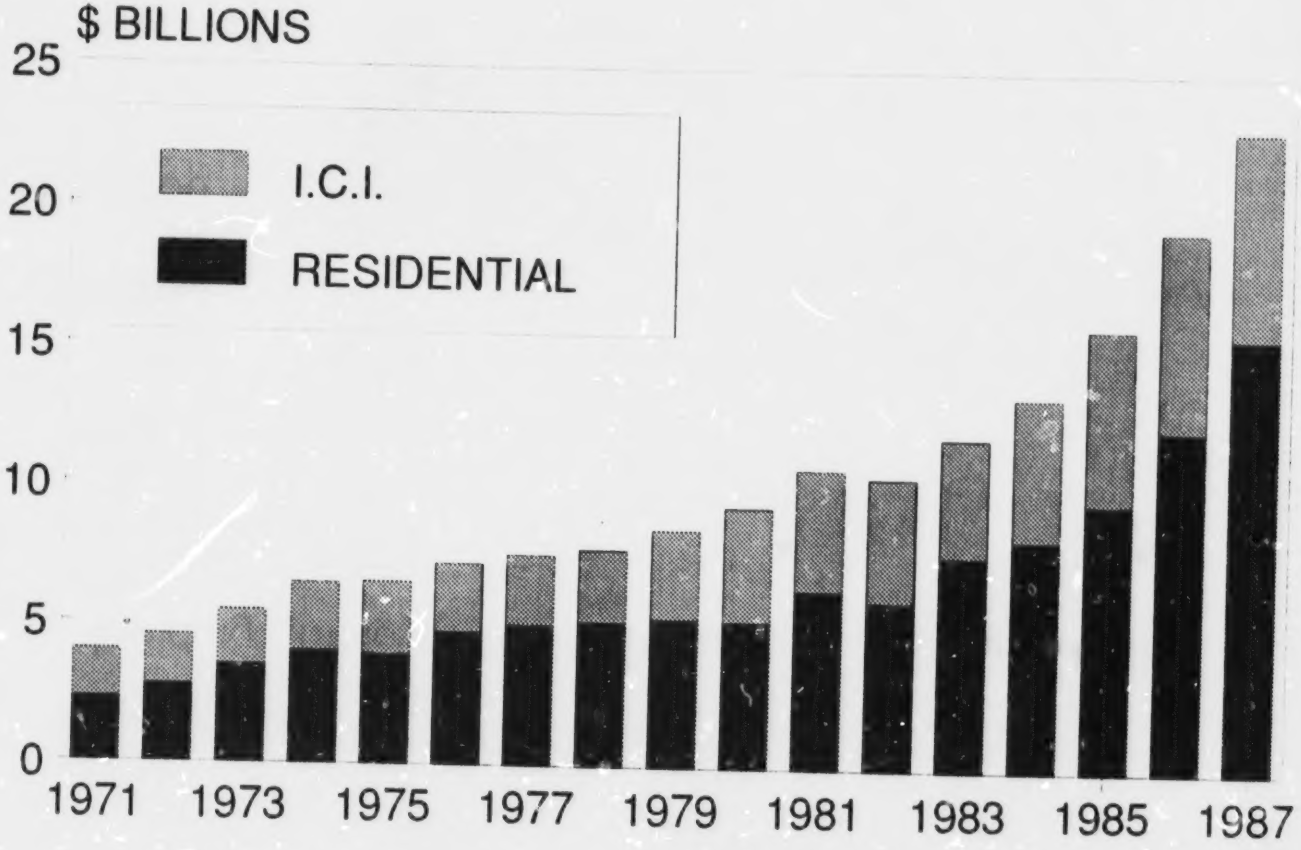


FIGURE 2

EMPLOYMENT IN ONTARIO

Building Employs 12% of Ontario's 4.7 Million Workers

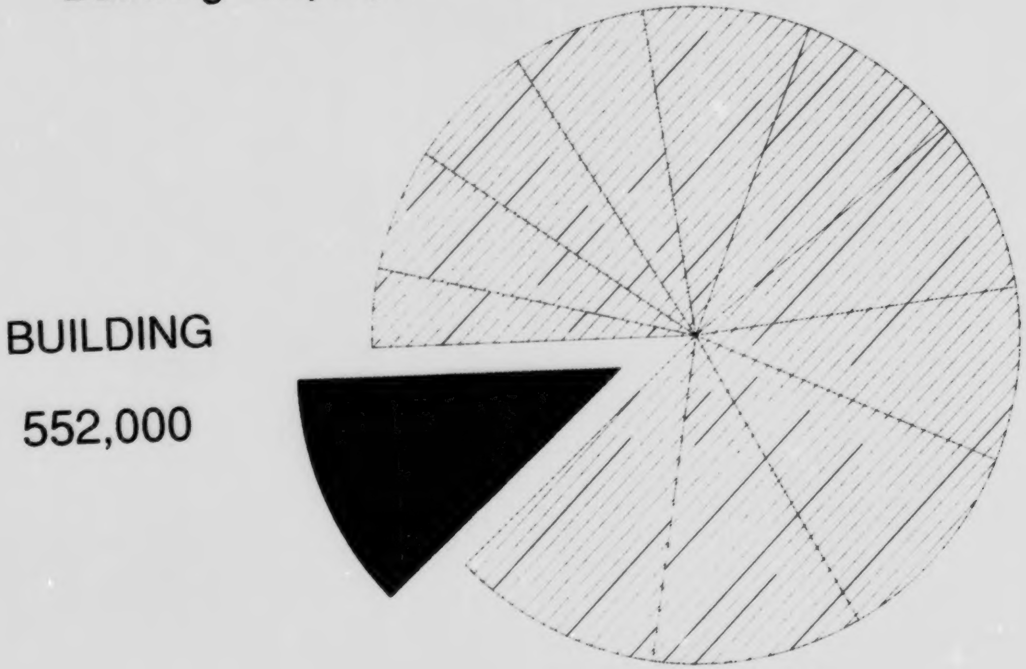
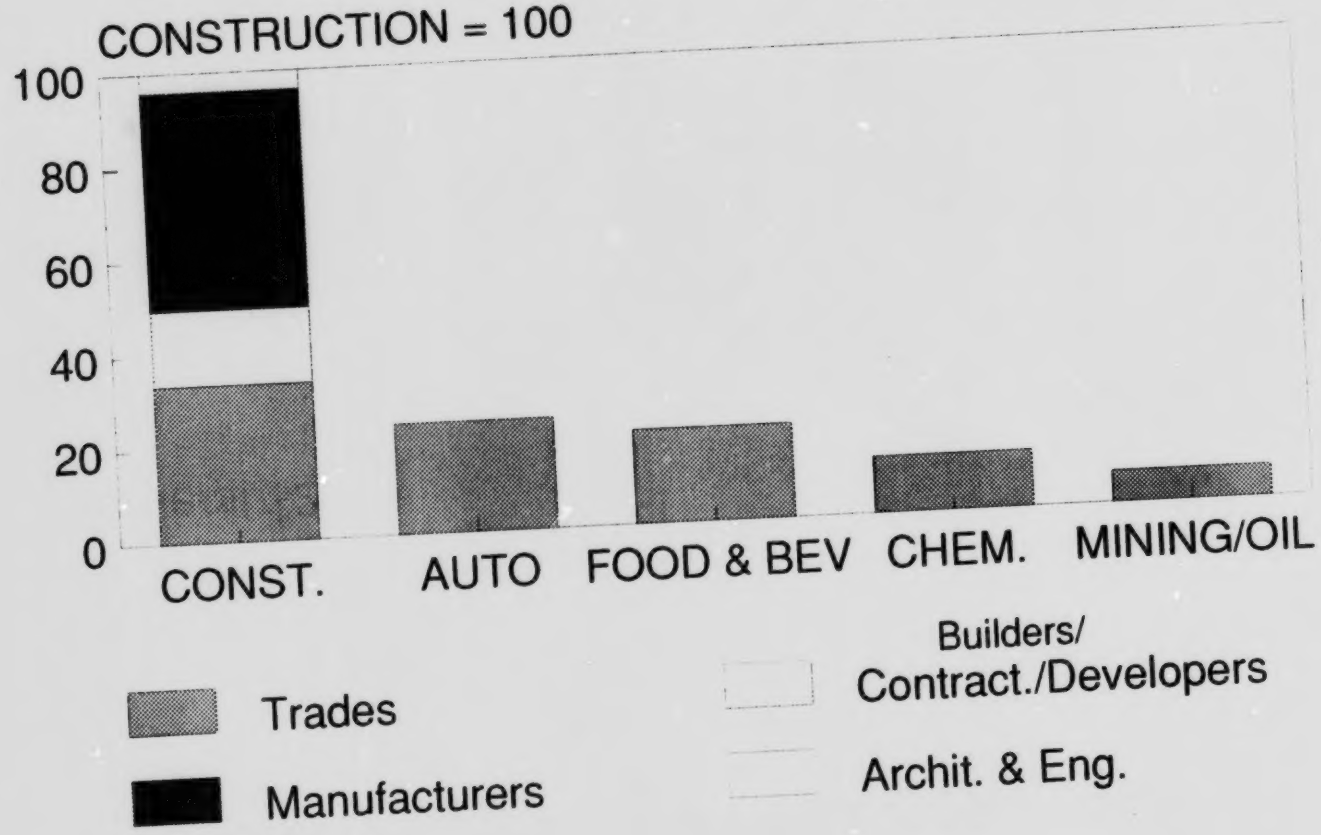


FIGURE 3

ONTARIO'S LARGEST INDUSTRY*



* Goods Producing Industries
based on employment

FIGURE 4

TAX IMPACTS
ONTARIO BUILDING INDUSTRY 1987

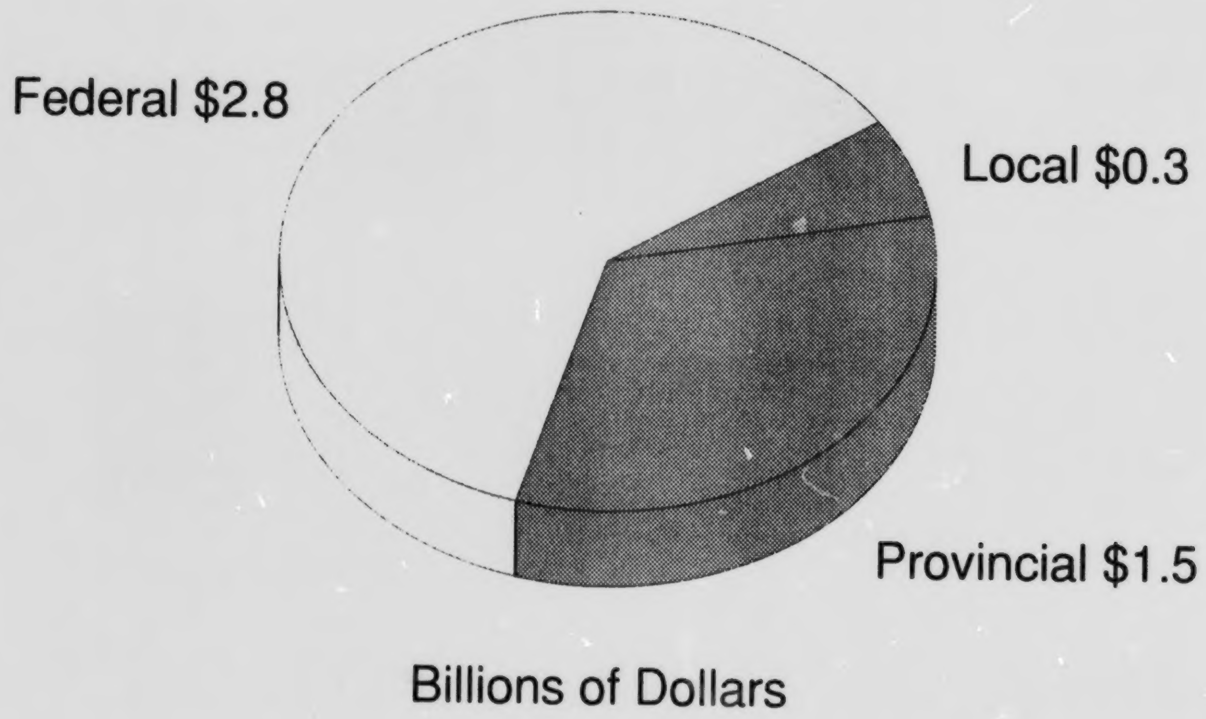


FIGURE 5

difficulties it faced and still faces. The program strategies were a direct result of research into the nature, size and impacts represented by the industry's problems. The five key thrusts decided upon were:

- rationalize regulations
- export development and market enhancement
- productivity and skills development
- increase industry awareness and cooperation
- establish a world-class building centre

The Building Industry Strategy (BIS) Board has been composed of leading figures from labour, industry and government appointed by the Minister of Housing. They, in conjunction with staff of the Building Industry Secretariat have modeled the program and their individual efforts on the goals set out in the Premier's Council publication "Competing in the New Global Environment" (Figures 6 - 7).

The Building Industry Strategy has allowed Ontario's building industry to make a good start on the resolution of its problems. The problems however are complex. They require attention and effort over a longer period of time than the BIS Board and Secretariat has existed. For this reason the Strategy's goals remain only partly fulfilled. Nonetheless, the first steps have been taken. A once extremely fragmented industry is now beginning to consolidate its efforts and to realize the benefits such an approach can bring.

BUILDING INDUSTRY STRATEGY PARALLELS THE PREMIER'S COUNCIL

<table>
<tr><th></th><th>BIS</th><th>PREMIER'S COUNCIL</th></tr>
<tr><td>STRATEGY</td><td>A long-term plan to enhance productivity and efficiency, thereby providing building industry growth and opportunity</td><td>To move the Province into a strong, competitive international position</td></tr>
<tr><td>MEMBERS</td><td colspan="2">Industry Labour Government</td></tr>
<tr><td>DECISION MAKING</td><td colspan="2">Consensus and Partnership</td></tr>
</table>

FIGURE 6

BUILDING INDUSTRY STRATEGY PARALLELS PREMIER'S COUNCIL

- EDUCATION AND TRAINING
- RESEARCH AND DEVELOPMENT
- EXPORT AND MARKET DEVELOPMENT
- REGULATORY REFORM

FIGURE 7

REGULATORY REFORM

At the beginning of the program, 280 Provincial Acts, 460 Codes and over 400 Regulations affected building activity.

Conforming to a myriad of overlapping and duplicate regulations adds to the completion time of building projects. This has resulted in up to 25 per cent of the final cost of a project being attributed to conforming to rules and regulations.

There are 4,000 - 5,000 officials currently in a system administered by 56 provincial and local agencies. The administrative costs to the Province of regulatory agencies were approximately $225 million in 1987.

What Needed To Be Done

- rationalize regulations affecting the building industry

- improve the administration of regulations to reduce costs to agencies

- develop a building requirements risk assessment framework that would rationalize building codes on a national basis: the framework would have three perspectives - technical, social and economic

- revise the Ontario Building Code Act to make it more accessible and easier to work with

- develop a process whereby the Ontario Building Code could be easily amended and would include public input

- in conjunction with other ministries, consolidate and streamline Acts dealing with the building process in the following areas: Health Care, Electrical Safety Code, Ontario Water Resources Act, Industrial Establishments Regulations, Public Pool Regulations, Environmental Protection Act

What Has Been Done

- a detailed prototype of a safety/risk assessment model will be completed in March 1989 in conjunction with the National Research Council: the framework is/will be used for the technical, social and economic evaluation of building requirements

- a Building Code amendment process was implemented and included the establishment of three advisory committees and a public hearings process which resulted in proposals for:
  - a Certified Professional Program
  - a Code for Existing Buildings
  - capacity to accept equivalents to Ontario Building Code requirements
  - conditional building permits

- complete detailed recommendations for consolidating and streamlining over 120 regulations and statutes that collectively apply to the building process have been completed and are awaiting Cabinet approval

- a prototype of the computerized Ontario Building Code on compact disk has been implemented

- a draft proposal of a new building industry regulatory/administrative system (Ontario Building Service - OBS) has been completed and will be submitted to Cabinet in the near future

- guidelines for the following areas have been completed and are ready to be released for comment:
  - Parking Garage Deterioration
  - Commissioning of Buildings
  - High-rise Rehabilitation

What Remains To Be Done

- further consolidation of rules and regulations affecting building fabric and process is required

- further attention must be paid to streamlining the planning process for buildings given that some projects wait for up to seven years before final approvals

- rationalization of agencies administering the building processes remains to be carried forward

- more interaction with municipalities and industry is required in order to define the regulatory problems still encountered

These tasks will be completed by the Ministry of Housing, but the input of industry is vital if the improvements are to be workable and cost effective.

EXPORT AND MARKET DEVELOPMENT

Ontario continues to experience a trade deficit in building products and services. The deficit with the U.S.A., by far the Province's largest trading partner (90 per cent), is currently over $0.5 billion and growing. Furthermore, Ontario is on the losing side of the "value added" balance; 95 per cent of U.S.A. exports to Ontario were finished or semi-finished goods, compared to only 71 per cent of Ontario's exports to the U.S.A. for the same product categories (Figure 8).

The conditions of U.S.A. - Ontario trade have been significantly changed due to the Free Trade Agreement. Ontario will gain access to an enormous U.S.A. market. But competition in the domestic market will be greatly intensified as large international competitors enter with often lower priced goods and services.

A similar situation exists in other markets. Imports have grown at a faster rate than Ontario exports. There is an increasing deficit in building products trade with the world.

What Needed To Be Done

- undertake research to determine building industry sector strengths, needs, export competitiveness and import weakness
- develop qualitative information on opportunities in the domestic, U.S.A. and global markets

ONTARIO EXPORTS AND IMPORTS OF BUILDING PRODUCTS

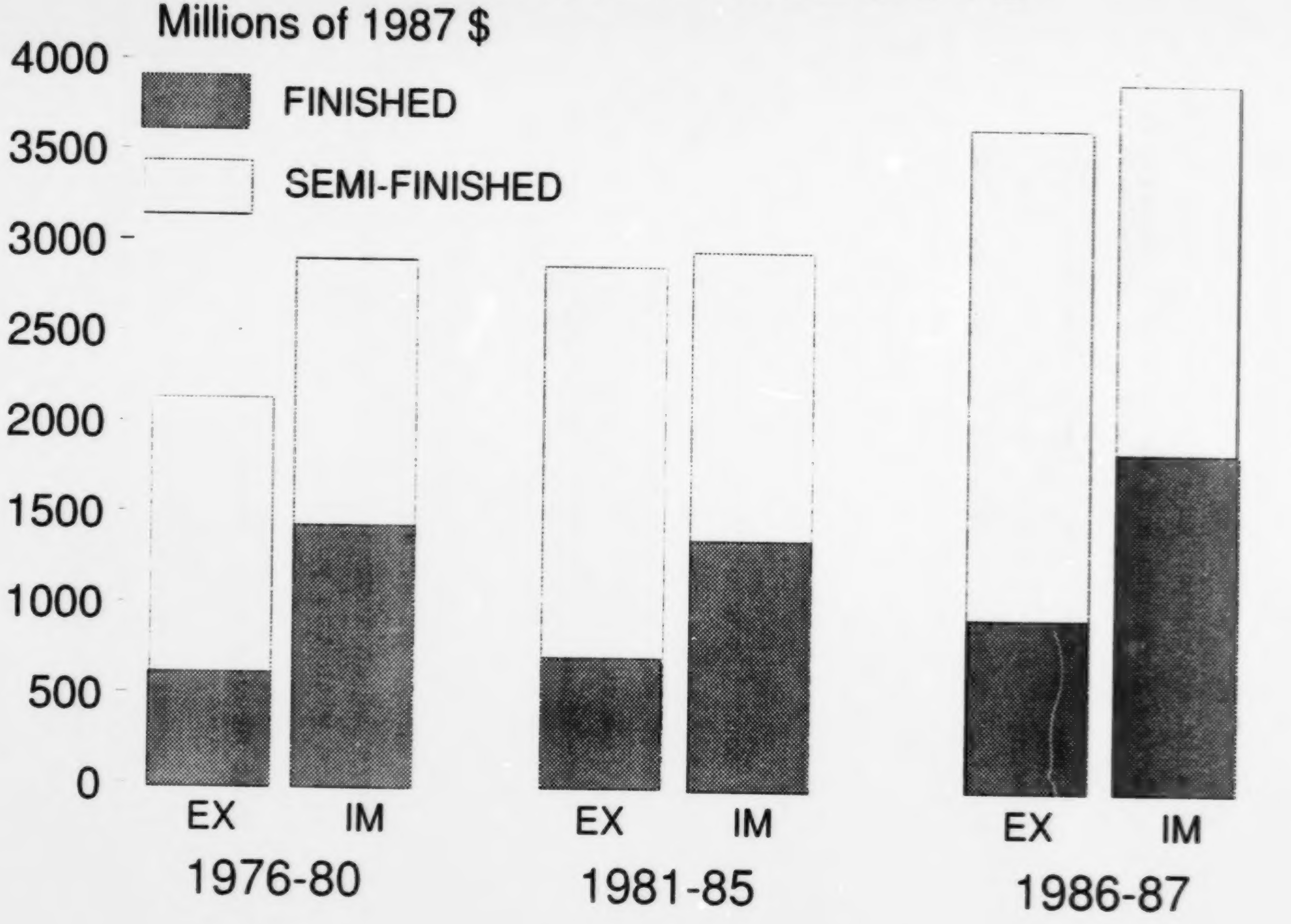


FIGURE 8

- generate interest and commitment on the part of Ontario firms to explore and exploit U.S.A. and off-shore markets

What Has Been Done

- comprehensive research on the strengths and weaknesses of Ontario's building industry have been completed

- all plans and activities have been designed to benefit two client groups:
  - manufacturers of primary, semi-finished and finished products
  - service firms ie. architects, consulting engineers etc.

- in March 1987 a trade mission was undertaken to China and the Pacific Rim countries to promote the sale of Ontario's building products and services

- business plans have identified three key market areas (U.S.A., Latin America, and the Pacific Rim) for export potential

- trade missions to the U.S.A., Hong Kong and Latin America have been carried out with the support of the Ministry of Industry, Trade and Technology

- the importance of exporting has been promoted at numerous trade shows, and association meetings

- market assessment reports and business plans on a country by country basis have been completed for the Pacific Rim, U.S.A., and Latin America including: China, Hong Kong, Thailand, South Korea, U.S.A., Argentina, Chile, Columbia, Venezuela, and Mexico

These reports and business plans will be available through the Ministry of Industry, Trade and Technology.

What Remains To Be Done

- maintain the relationships with the key export contacts and local representatives that have been built up over the past three years

- continue to build pertinent market assessment networks and intelligence about markets that could result in profitable business investment ventures

- conduct research into the trading patterns and trends in targeted countries by analyzing the United Nations or International Monetary Fund data bases

- develop knowledge of available or emerging technology in the building and construction field so as to transfer the knowledge to Ontario firms that could subsequently exploit export markets

These activities will now be conducted through the Ministry of Industry, Trade and Technology with the input from an Advisory Board of industry representatives.

AWARENESS AND COOPERATION

Fragmentation and lack of focus were the major reasons preventing the industry itself from developing a long-term plan for dealing with new markets and improving productivity.

It was important to raise the industry's recognition of itself as an industry, understand the problems facing it and recognize the effects of the individual parts of the whole.

What Needed To Be Done

- industry awareness and cooperation needed to be increased as the absence of strategic direction for the industry inhibits long-range, cohesive planning

- without an industry-wide focus the building construction industry suffered in many ways, namely: reduced effectiveness of public resources due to lack of focal point at federal and provincial governments; ineffective targeting and/or communications of support services, education/training programs, financial assistance and other resources available to the industry; poor access to information on markets, trends, technology, R & D; and lack of understanding, awareness and sensitivity of the impact of government programs and policies on the industry and the public

What Has Been Done

- "Building Tomorrow Forum", November 2-6, 1986; the conference heightened industry awareness; fostered the transfer of information, knowledge and technology; and provided a status report on the state of the industry in Ontario and throughout Canada

- development of a market survey for a building construction and trade information system; the results are beneficial to the Board in determining the building industry's perception of information use, computer awareness, potential application system technologies, relevancy of a centralized data-delivery service, transfer of research technology and preparedness to compete in domestic and foreign trade

- the BIS Board was selected as a test site for the Canadian Construction Information System (CCIS): CCIS allows users to access a wide variety of information sources and databases - product data, list of product manufacturers and suppliers, building codes, standards, specifications, directory of government and private databases and other information sources, building materials evaluation data, building research data, occupational health and safety standards, and educational services - more information is available by contacting the CCIS offices at 164 Merton Street, Toronto, Ontario M4S 3A8 (416) 489-5778

- in conjunction with the Council of Ontario Construction Associations the Board created a comprehensive information base on Ontario's building construction industry to determine the economic impact of the industry on the economy of Ontario, and to identify the major opportunities and challenges facing the industry in the future

- a Speakers Bureau, comprised of leading figures in the industry was established to interact with all sectors of the industry

- a conference/trade show exhibit was developed

- numerous publications for industry-wide distribution were prepared and distributed, including the following: Building Industry Highlights 1986/87 and 1987/88; Building Industry Strategy Board Annual Reviews 1986/87 and 1987/88; and the Building Industry Strategy - these documents are available through the Ministry of Housing

- industry conferences, trade shows and association meetings were regularly attended to listen to the concerns of the industry and to address the industry and provide information on the Board's activities

- established and maintained effective lines of communication, on a daily basis, with all sectors of the building industry

What Remains To Be Done

- provide a focal point for the industry to allow integration and consolidation
- coordinate research, and support the research activities of industry associations
- sensitize and assist the government to assess the impact of programs and legislation
- develop and update a data base on the industry to be used in determining appropriate directions for the industry
- hold seminars and major conferences to promote common understanding of industry issues and commercial opportunities
- promote and encourage greater cooperation and joint undertakings amongst all sectors of the industry
- promote industry successes through appropriate public relations media events such as awards, exhibits, newsletters, print and broadcast media releases and annual reports
- assist existing associations and other interested parties to make their views heard at the right levels of government and, on particular projects, to work jointly with other groups that have shared interests

These activities will require some form of continued liaison among appropriate representatives of the building industry and the support of government.

PRODUCTIVITY

Low productivity hinders the industry's domestic performance and its ability to compete internationally. Productivity in the construction industry has remained static and has been significantly lower than that in other sectors such as agriculture and manufacturing (Figure 9).

The reasons for poor productivity are many and varied: lack of management skills in some areas; the absence of a construction buyers' association to stimulate productivity; very low investment in research and development; slow take-up of new technology; the cyclical nature of building construction; and, the use of the interest rate in managing the economy as well as the business cycle (Figures 10 - 11).

Optimum productivity will become increasingly essential as domestic demand for construction declines and export markets or import-replacement markets assume greater importance.

What Needed To Be Done

- productivity gains are essential as domestic markets decline and export markets become more important; without these gains, the industry's domestic performance is inhibited as is its ability to compete internationally

RELATIVE PRODUCTIVITY OF THE CONSTRUCTION INDUSTRY

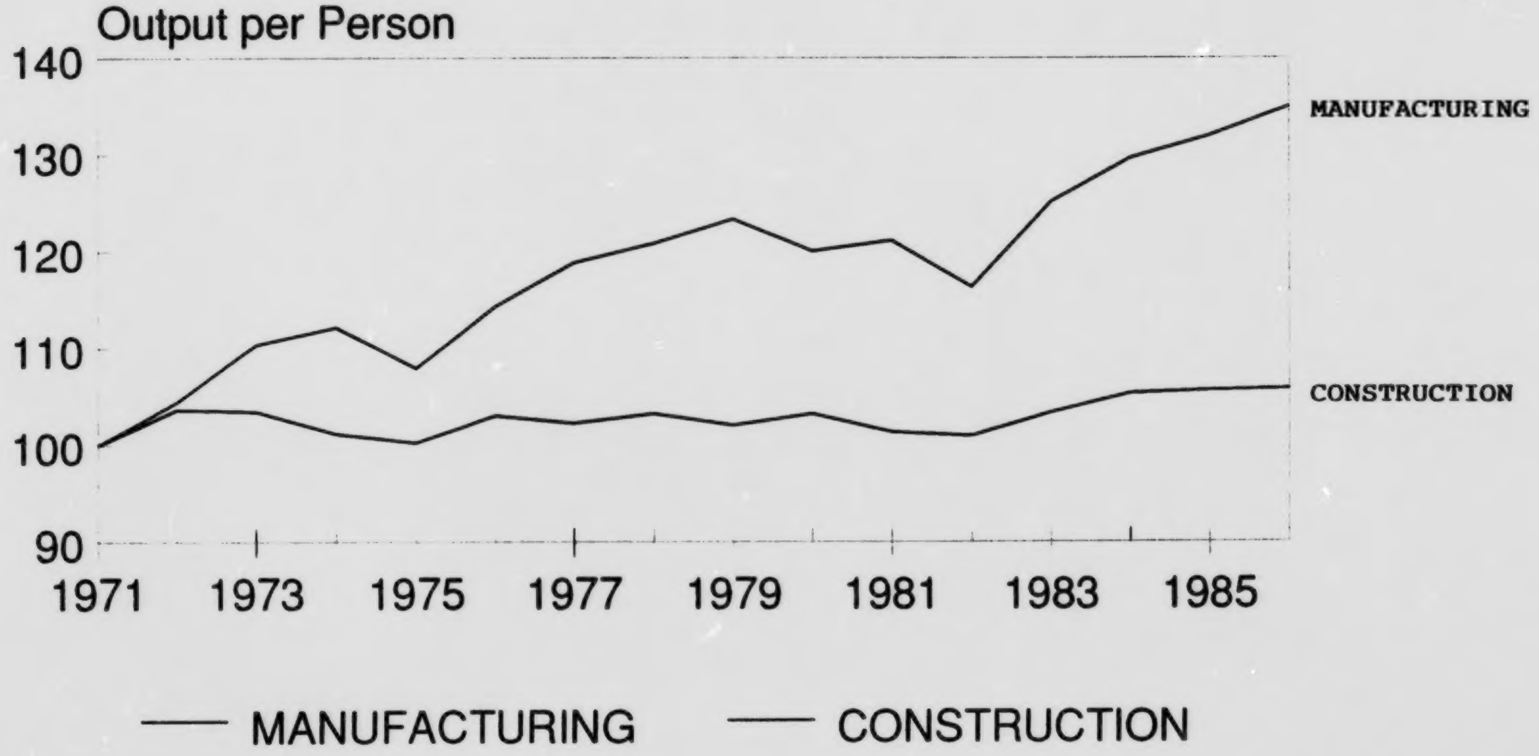


FIGURE 9

BUILDING R & D

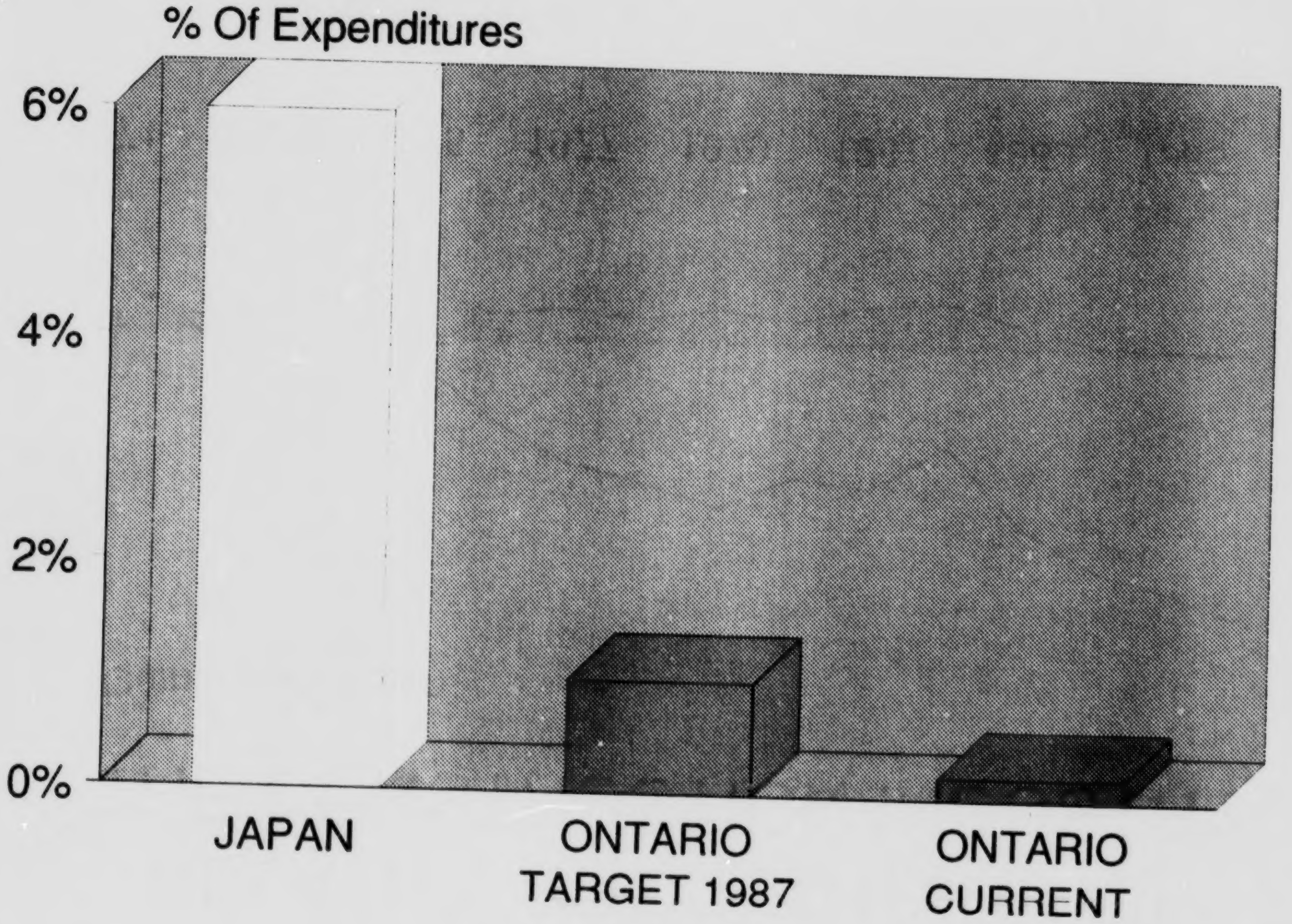


FIGURE 10

CONSTRUCTION IS A HIGHLY CYCLICAL INDUSTRY

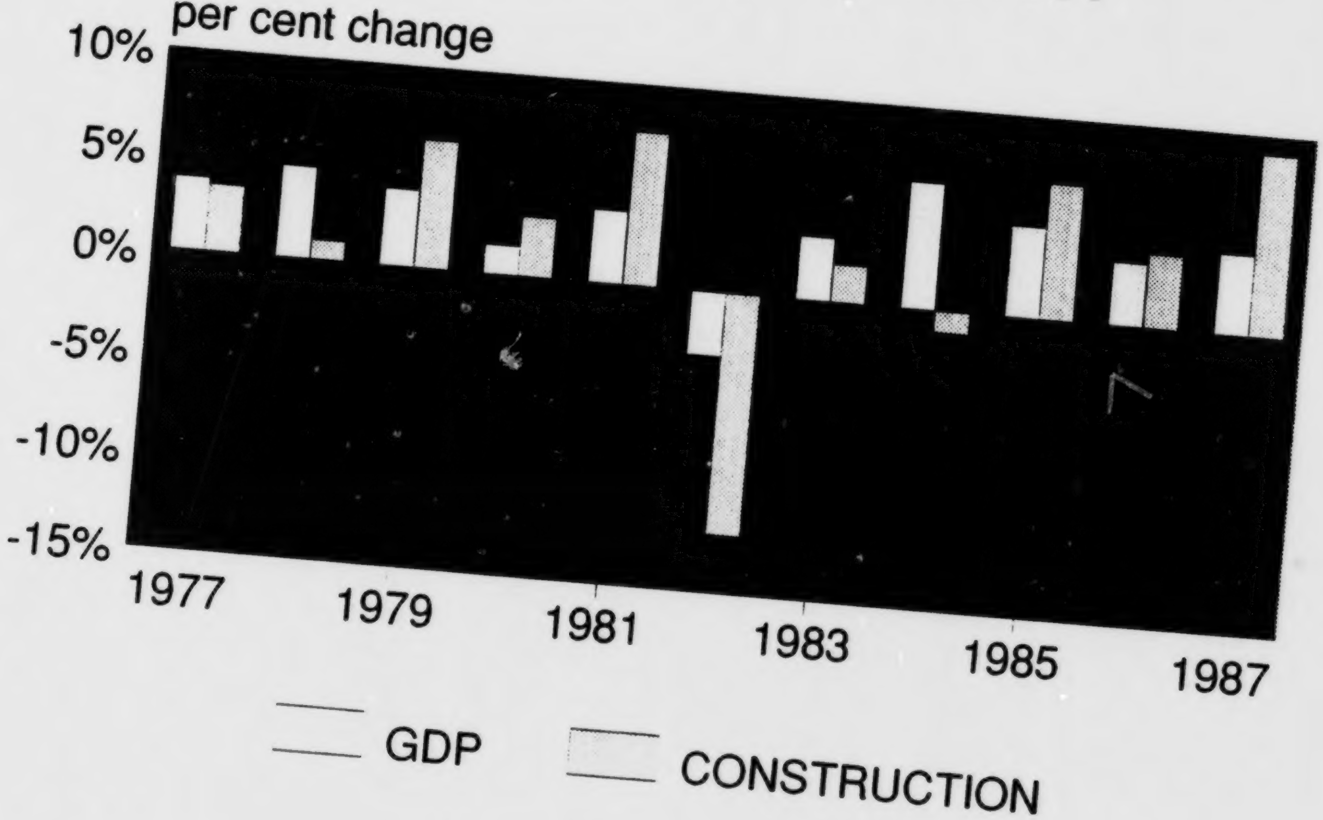


FIGURE 11

- improve the performance of the building industry so as to meet the financial, functional, environmental and aesthetic needs of the owners and users of the built environment

- improve the business management skills of general and trade contractors, home builders and renovators; improve the relationship between the owner and the design-build team and hence, the performance of the latter

- identify research and development needs and establish priorities

- foster the adoption of life cycle-costing in the design of buildings so as to reduce the total construction, operating and maintenance costs of the built environment

- develop new sources of funding for building research and development

- improve and expand formal education for building at the post-secondary level

- encourage more transfer of new and provide building technology to the field

What Has Been Done

- the first stage of development of a program of courses to improve the productivity of on-site construction through pre-planning, cost-effective scheduling, improved materials handling and other techniques has been completed

- the feasibility of organizing the major buyers and owners of construction has been determined with positive results; the intention is to assist the buyers to exert more effective market pull and to encourage innovation and productivity improvement in the industry

- a program of courses has been developed for teaching business management skills designed specifically for contractors, homebuilders and renovators - these courses were developed by the Construction Management Institute and are available through Humber College of Applied Arts and Technology

- survey to identify the practitioners' views regarding the need for new, altered or expanded undergraduate, graduate and research programs at Ontario's universities already offering architectural, engineering, business administration, planning, behavioral and environmental sciences

- eighteen courses have been completed in conjunction with the Ontario New Home Warranty Program and are being delivered at community colleges - for further information contact the Ontario New Home Warranty Program at (416) 488-6000

- the Ad Hoc Committee on Professional and Management Development was established to advise the Board how it could best contribute to the development and improvement of education for building and the concomitant expansion of technical, organizational and management research at Ontario universities

What Remains To Be Done

- an additional twelve elective courses are required to be developed and delivered to improve the business management skills of general and trade contractors, home builders and renovators

- the Construction Management Institute Implementing Committee is responsible for monitoring and marketing the "Management for Quality and Profit Program" for contractors, renovators and home builders

- funding the preparation of the remaining courses over the next two years

- stage two of the "On-Site Productivity Program" will require development of course material and a system to diagnose the training needs of individuals and firms, evaluate achievements and establish a system for reviewing and updating the course material; following the establishment of the program, an effective delivery system will be required

- consultants required to complete the program "To Improve On-Site Productivity" and, upon approval, to prepare an implementing program

- staff and funding required to organize the buyers of construction and to initiate programs to share operating and maintenance cost data, establish an early warning system for commonly experienced problems and to identify R & D priorities

- foster a more holistic approach to university education for building and for the related R & D in technical, organizational and management areas by responding to the request for financial assistance to establish a Centre for Studies in Construction at the University of Western Ontario

- design an incentive program to assist universities to improve education for the develop/build process

It is hoped that much of this activity can be carried on by the industry in cooperation with the Ministry of Colleges and Universities and the various other educational institutions.

TRAINING & EDUCATION

The skilled labour workforce in Ontario is shrinking; the situation in the building and construction sectors is even more acute. The construction workforce is aging (average age of bricklayers is 54 - for all trades it is over 50), and the average in some trades is less than 10 years from retirement (Figure 12).

Continuing demand for skilled workers is projected, but the number of young men and women entering the trades is not high enough to keep pace.

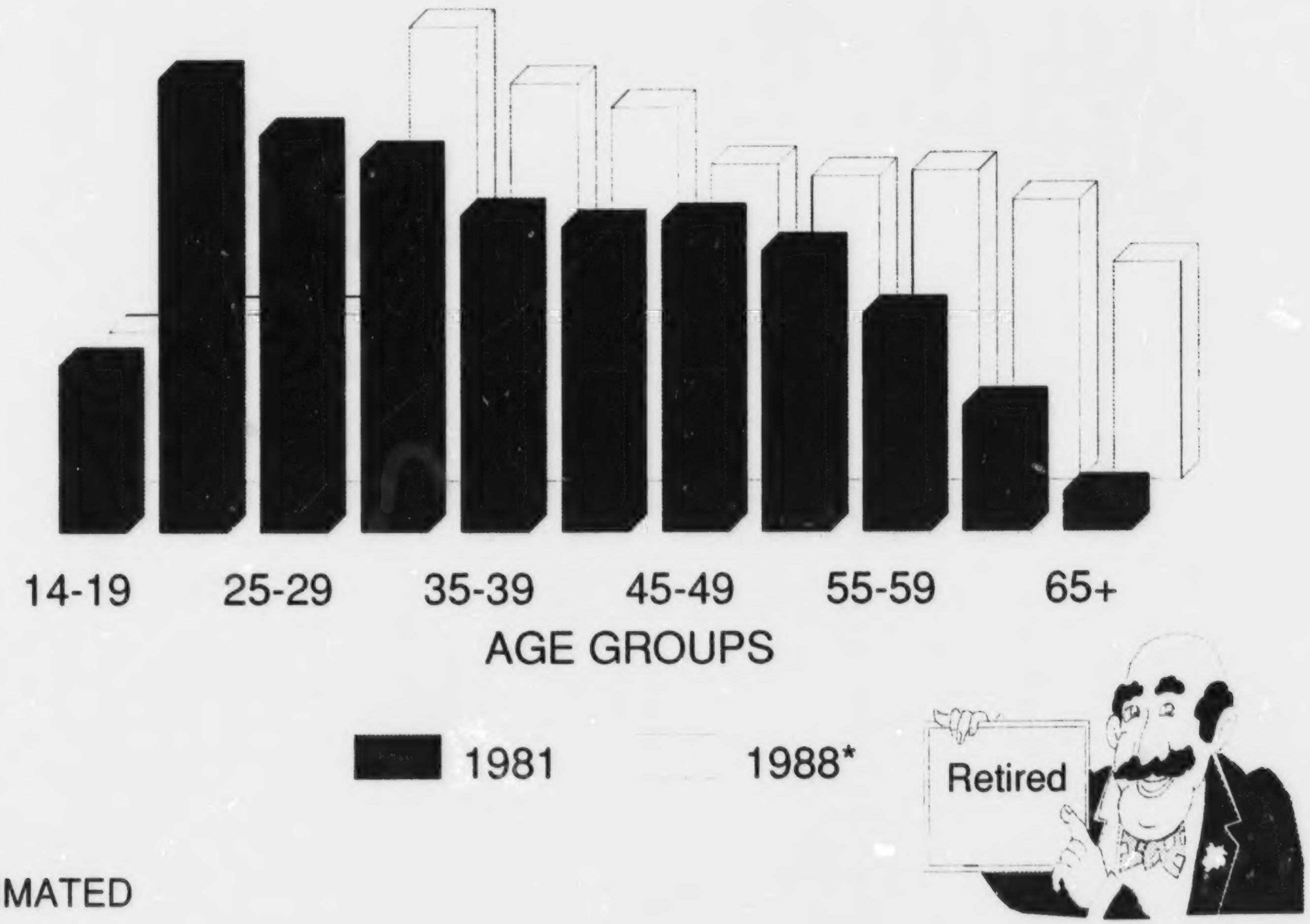
At the same time municipalities and consumers are expressing concerns about the quality of construction as a result of insufficiently and poorly skilled labour.

What Needed to be Done

- establish a focus on the training needs of the building construction industry to enable a comprehensive strategy for meeting the industry's broad range of educational requirements: entry level training, retraining, management improvement, career development

- enhance the image of the industry within the public and to potential members of the building industry workforce in terms of the career opportunities it offers

LABOUR FORCE IS AGING



*ESTIMATED

FIGURE 12

What Has Been Done

- a career centre was established at the "Building Tomorrow Forum" with over 4,000 Metropolitan Toronto high school students in attendance

- production and distribution of over 100,000 books which illustrated the range of training programs available for middle management in the building industry - these were distributed to every senior elementary school and high school in the province

- staged the 5-day hands-on career exposition "Future Building '88" where over 50,000 young people from across Ontario were able to come and experience the Ontario building industry and what it has to offer ($600,000 was raised by the industry to sponsor this exposition)

- "Future Building '88" provided a new and improved understanding of the building industry and its many opportunities for a rewarding and satisfying future

- "Build Your Future" Competition - held in conjunction with "Future Building '88, students had an opportunity to submit drawings, scale models or descriptive essays on their concepts of buildings in the year 2000 - cash prizes were awarded in various catagories by the industry

- associated with "Future Building '88" was the development of a number of videos ("Build Your Tomorrow", "I Built That", and "Future Builders"), and teacher's aids which provide information for educators on the building industry as a viable career opportunity for today's youth - a complete list of available videos and guides is described in Appendix E

- initiated "Think Tank '88" - a first-ever forum for members of the full construction industry both management and labour, and government training officials to develop an Action Plan/Strategy to better equip the industry to meet its skilled worker needs (Appendix C)

- produced three computer assisted learning (CAL) modules including an informative "building career paths" module

- A "Construction-Trades Orientation" course was developed and is now being tested in Hamilton in association with Mohawk College and the Hamilton Construction Association

- developed, in association with the Ontario General Contractors Association, an educational video on the tendering, bidding, and closing process

- conducted labour market needs surveys of the building industry across Ontario to ascertain local, regional and provincial supply/demand for skills training

What Remains to be Done

- follow-up "Future Building '88" in schools and with industry associations in order to maintain and increase public awareness and enthusiasm
- undertake activities that promote the awareness of existing training and support-funding programs to the industry
- emphasize and promote the importance of human resource planning and development to the industry
- develop a network of industry and training representatives across the province to resolve training and education problems and concerns in the building industry
- liaise with government agencies to discuss policies and programs that affect the supply and demand of skilled labour in Ontario's building industry

A skills development strategy framework has been developed by the industry. The Ministry of Skills Development, who has the mandate for refining and delivering this strategy, is encouraged to do so in consultation with appropriate building industry representatives.

OTHER ISSUES AND CHALLENGES

In addition to the longer-term issues being addressed by the BIS Board, there were a number of shorter-term industry issues which the Board took an active role in.

i) Delayed Home Closings and Material Substitution

During the recent boom of residential construction in the Province (especially Greater Metropolitan Toronto), delayed closings and material substitution were two significant problems facing the industry. The situation developed because of a combination of factors - dramatic increase in sales, shortages of skilled labour and materials, unilateral substitutions of materials and house design, delays in permit approvals, and over-commitment by the builders.

The BIS Board and representatives from the Ontario and Toronto Home Builders' Associations, the Ministry of Consumer and Commercial Relations, the Ontario New Home Warranty Program, the Urban Development Institute and the Consumers Association of Canada brought forward a number of recommendations which resulted in changes to the Ontario New Home Warranty Program.

ii) Free Trade

Canada and the United States have entered into an historical agreement which will open the boundaries to freer trade. An analysis of the effects of freer trade with the United States on major sectors within the Ontario building industry was undertaken for inclusion in the provincial paper on Free Trade.

In the final analysis, not all parts of the building industry will be impacted equally by a free trade agreement with the U.S.A. There will clearly be some industries which will be negatively affected by the lowering of tariff barriers and increased competition from U.S.A. producers (i.e. sash, door and other millwork industries, metal fabricating industries, the electric lighting fixtures industry and the paint and varnish industry).

Similarly, there are some industries which will benefit by the reduction of tariffs on their products in the U.S.A. and the security of access to the U.S.A. market which would accompany a free trade agreement (i.e. sawmill, planing mill and shingle mill industry; veneer and plywood industries; other wood industries - waferboard and particleboard - asphalt roofing industry and the clay products industry).

Given the complexities of the Free Trade Agreement it is recommended that industry participants closely monitor developments.

iii) Slater Task Force on Insurance

Working closely with the Slater Task Force on Liability Insurance and the Ministry of Consumer and Commercial Relations, the BIS Board formed a committee comprised of representatives of the owners and operators of buildings, the manufacturers of building materials, contractors, architects, engineers and other relevant provincial ministries and the insurance industry. The object of this ad hoc committee was to determine if, by working together, the building industry could find either a comprehensive or, at least, an integrated approach for dealing with insurance for Ontario's building industry.

A final brief was prepared and submitted by the Board to the Slater Task Force in the Spring of 1986.

iv) Impact on the Building Industry of New Occupational Health and Safety Regulations

The BIS Board drew the attention of the Ministry of Labour to the unique problems of construction sites and urged continuing dialogue to address these problems.

As a consequence, the Ministry of Labour agreed to solicit the comments of the Building Industry Secretariat and industry representatives on any future changes to their legislation or regulations which may impact the building industry.

v) White Paper on Tax Reform

Recently, many industry associations have voiced their concern over the proposed federal government tax reforms. It is feared by industry participants that proposed changes will have detrimental effect upon various sectors of the industry.

The Ministry of Housing, in putting forward its position on tax reform, commissioned several studies to identify the various impacts. Furthermore, the BIS Board convened a Tax Reform Symposium as a forum for various industry associations to voice their concerns regarding the proposals.

As a result of the round table session, an Ad Hoc Development and Construction Council was established to present a united front in addressing their concerns to the Federal Government.

The Council believed that the reform proposal would see the levels of activity of homebuilders reduced by as much as 24 per cent, and of land developers by 30 per cent; to maintain present returns to investors, rents on rental projects would increase 35 per cent and, Phase II of Tax Reform would add an additional $10,000 to the cost of a $120,000 home (thereby reducing the number of first-time home buyers able to enter the market).

vi) International Building Centre

It has been suggested that an international building centre would facilitate a reduction in industry fragmentation and would serve as a permanent domestic and foreign marketing vehicle for the Ontario building and construction industry.

A feasibility study on the need for such a world-class centre and the industry's willingness to undertake the funding of such a centre was undertaken by the consulting firm Cresap. In its final report Cresap states that a one-million-square-foot, multi-service building centre, featuring continuous, rotating and outdoor exhibitions, an information service, conference and meeting facilities, and office space has significant appeal to the building industry and to the public.

It was agreed that such a centre would contribute to the Board's goals of promoting export development, raising productivity and increasing industry awareness and cooperation. As well, it would assist the long-term development of all sectors of the industry. While not feasible as a stand-alone commercial venture, such a centre could be commercially viable provided that certain site related conditions are met.

The BIS Board has given its endorsement to a proposal by the Toronto Construction Association (TCA) to build a scaled-down version similar to that studied in the Cresap report. TCA proposes to develop property adjacent to their current location in North York.

Interested parties should contact Mr. Temple Harris, Executive vice-President of the Toronto Construction Association at (416) 499-4000.
Copies of the Cresap study are available through the Buildings Branch of the Ontario Ministry of Housing.

vii) Construction Information Base

Traditionally, major industry associations have not been able to anticipate the economic challenges and to respond in an effective manner. Associations have lacked the essential data required to assist in forecasting how this complex industry may react to challenging economic conditions.

In today's socio-political environment, it is necessary to present a knowledgeable, professional and consistent case to provincial politicians and public officials.

To present such a case to both industry and government, it is essential to accumulate accurate data.

The Council of Ontario Construction Associations (COCA) and the BIS Board agreed to enter into a joint venture arrangement and create a comprehensive computerized information base of Ontario's building and construction industry. Statistical information found within this data base includes a comprehensive statistical profile of the Ontario building and construction industry; a comparative analysis of the industry; and, an investigation of the issues, challenges and opportunities.

Examples of the types of data which can be retrieved from the database are illustrated throughout this document and in Appendix B. Such readily available information is vital as it provides industry with a foundation for its responses to government on new policy directions.

Maintenance of this data base is the responsibility of COCA.

viii) Residential Trades Contract Negotiations

Officials from the BIS Board are working with the members of the Toronto and Ontario Home Builders Associations to set up an information seminar for labour, management, contractors and developers regarding the pros and cons of a collective approach to bargaining with the residential trade groups. The outcome should determine the value of collective agreements within the residential sector.

APPENDIX A

ONTARIO BUILDING INDUSTRY HIGHLIGHTS

1988

COPIES OF THIS REPORT ARE AVAILABLE THROUGH THE BUILDINGS BRANCH OF THE ONTARIO MINISTRY OF HOUSING

INTRODUCTION

This report was prepared by Clayton Research Associates on behalf of the Building Industry Strategy Board. It presents highlights of past and expected future trends in the building industry in Ontario and Canada. For the purposes of this report, a broad definition of the building industry has been adopted; it includes not only the building construction industry but also other industries, such as suppliers of building products and services, which are affected by the volume of building activity.

The report is divided into the following five main sections:

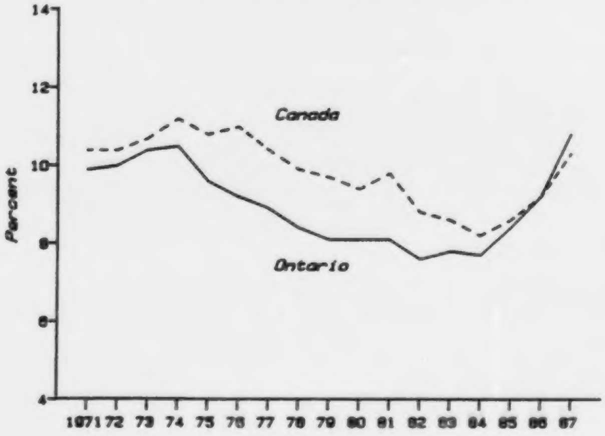
1. Building Industry Activity - review of expenditures on residential and non-residential construction activity in Ontario and Canada over the 1971-1987 period and identification of the sectors of the economy which are the main consumers of construction activity.
2. Profiles of Building Industry Participants - review of the characteristics of firms in the building construction industry, the building products manufacturing industry, architectural and engineering firms and the construction labour force.
3. Impacts of the Building Construction Industry - identification of the impacts of residential and non-residential building construction activity on employment and income.
4. Exports and Imports of Building Products - review of the volumes of international trade (exports and imports) in building products for Ontario and Canada.
5. U.S. Building Industry Activity and Exports to the U.S. - review of the volume of building construction expenditures in the U.S., Ontario's major export market for building products, and trends in exports to the U.S.

The information presented in the report has been updated from that presented in a previous report for the Building Industry Strategy Board in October, 1986. Published and unpublished Statistics Canada data are the main source of the information contained in the report. In many cases, however, the data have been adjusted by Clayton Research either to reflect constant dollar estimates or to develop estimates specifically relating to the building industry.

BUILDING INDUSTRY ACTIVITY

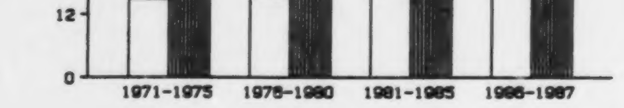
A Resurgence in Building Construction Spending Since the Recession

BUILDING CONSTRUCTION EXPENDITURES
AS PERCENT OF GDP
ONTARIO AND CANADA, 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

AVERAGE ANNUAL REAL BUILDING CONSTRUCTION
EXPENDITURES, ONTARIO AND CANADA, 1971-1987

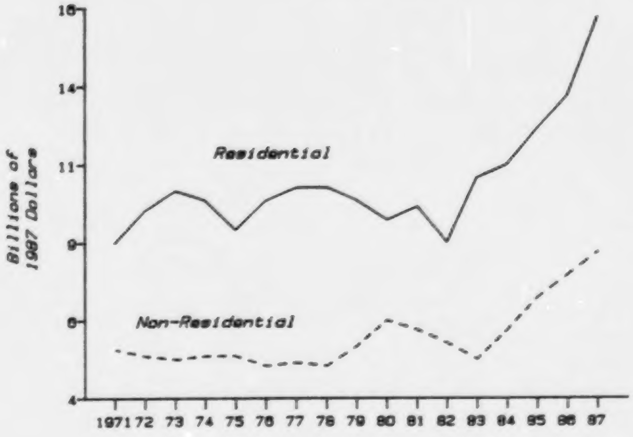


Source: Clayton Research Associates based on Statistics Canada data.

- There has been a dramatic increase in the volume of building construction activity in Ontario since the early 1980s.
- As a percent of gross domestic product (GDP), expenditures on building construction in Ontario have increased from an average of 8 percent over the 1981-1985 period to over 10 percent in 1987.
- The recession year of 1982 saw building construction expenditures drop to only 7.6 percent of GDP in Ontario. The recovery since the recession brings building construction spending to the levels which predominated in the first half of the 1970s.
- The trend in Canada is similar though, until the last two years, building construction accounted for a larger share of GDP for Canada than was the case for Ontario.
- Spending on building in Ontario in 1986-1987 averaged $22.6 billion (1987 dollars) - an increase of $5.9 billion annually over the 1981-1985 average.
- The increase in average spending of building in Ontario accounted for over half the $10.4 billion increase for Canada as a whole from 1981-1985 to 1986-1987.

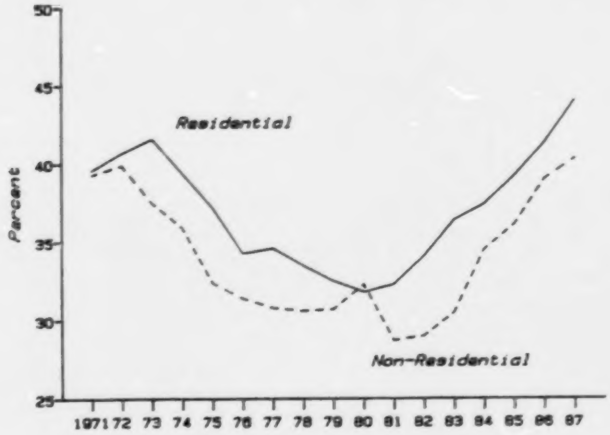
Both Residential and Non-Residential Building Share in the Recovery

REAL BUILDING CONSTRUCTION EXPENDITURES
BY TYPE OF WORK, ONTARIO
1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

RESIDENTIAL AND NON-RESIDENTIAL BUILDING
EXPENDITURES, ONTARIO AS A PERCENT OF CANADA
1971-1987

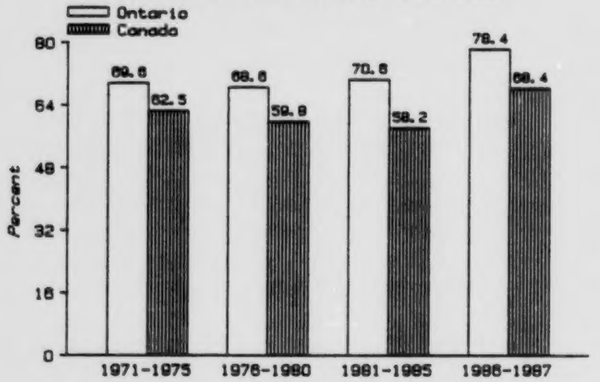


Source: Clayton Research Associates based on Statistics Canada data.

- Spending on building construction totalled $24.2 billion in Ontario in 1987 - this is a record high both in current and constant dollars.
- Both residential and non-residential construction expenditures in the past three years have been well above previous record highs (in constant dollar terms) in the late 1970s.
- Residential construction expenditures in Ontario in 1987 totalled $15.7 billion (including both new and repair work) - by far the highest real level ever.
- Non-residential building activity has also recovered strongly. Total expenditures in 1987 were at a record level of $8.5 billion - more than 50 percent higher than the average constant dollar expenditures in the 1970s.
- The recovery in building activity has been stronger in Ontario than in other parts of Canada. Ontario's shares of both residential and non-residential building expenditures in Canada have increased significantly in the past three years.
- To some extent, the rise in Ontario's share of building construction work in Canada is due to the decline in activity in western Canada since 1981.

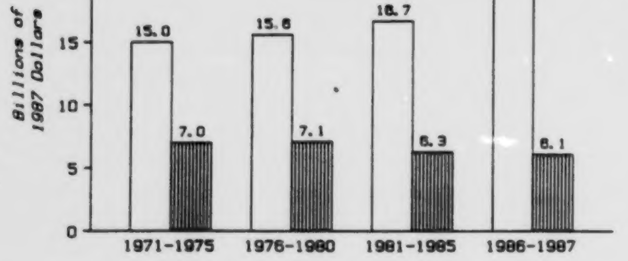
Rising Share of Construction Spending for Building Work

BUILDING CONSTRUCTION EXPENDITURES AS PERCENT OF TOTAL CONSTRUCTION EXPENDITURES ONTARIO AND CANADA, 1971-1987



Source: *Clayton Research Associates based on Statistics Canada data.*

AVERAGE ANNUAL REAL BUILDING AND ENGINEERING CONSTRUCTION EXPENDITURES, ONTARIO 1971-1987



Source: *Clayton Research Associates based on Statistics Canada data.*

- Building work accounted for almost 80 percent of total construction expenditures in Ontario in 1986-1987, a larger proportion than for other parts of Canada. For the country as a whole, building accounted for less than 70 percent of total construction work.

- Building construction has accounted for an increasing share of total construction work in the 1980s.

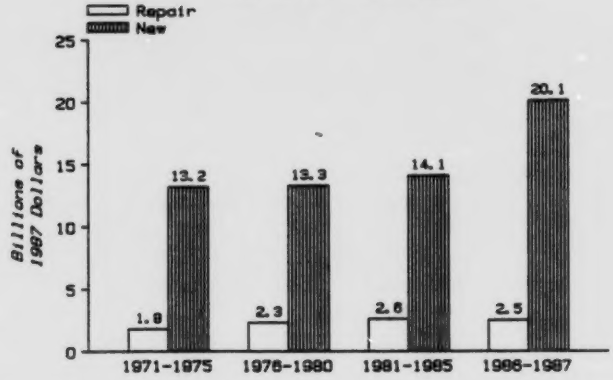
- Engineering generally accounts for a larger share of total construction in western Canada due to energy and mining work. Low levels of activity in these sectors have contributed to the increased share of activity for building construction.

- Average annual real expenditures have increased significantly for building construction in Ontario in the past two years. Expenditures on engineering work have declined in the 1980s compared to the 1970s.

- Real spending on engineering construction in Ontario peaked in 1975 at $7.8 billion (1987 dollars). In 1987, spending amounted to only $6.1 billion. This is slightly higher than the $5.5 billion spent in 1985 - the lowest year in the past two decades.

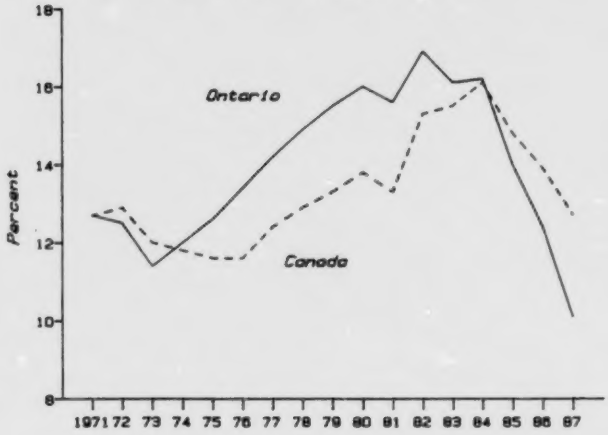
Recovery in Building Spending Due to New Work - Repair Spending Relatively Stable

AVERAGE ANNUAL REAL NEW AND REPAIR EXPENDITURES ON BUILDING CONSTRUCTION ONTARIO, 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

REPAIR EXPENDITURES AS PERCENT OF TOTAL BUILDING CONSTRUCTION EXPENDITURES ONTARIO AND CANADA, 1971-1987

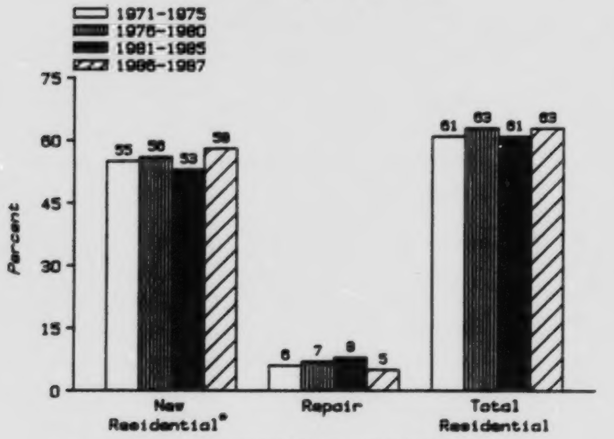


Source: Clayton Research Associates based on Statistics Canada data.

- The increase in real spending on building construction in 1986-1987 is due to higher spending on new building work.
- Real spending on repair work has remained relatively stable for the past decade.
- In 1986-1987, real spending on new building in Ontario increased by over 40 percent from the 1981-1985 average to an annual average of over $20 billion (in 1987 constant dollars).
- Until 1985, repair work accounted for a larger proportion of total building construction expenditures in Ontario than in most other regions.
- However, due to the strong growth in new building in Ontario in the past four years, the situation has reversed. This reversal is not as apparent for other parts of Canada and is unlikely to continue indefinitely.
- In 1987, repair work accounted for only 10 percent of total building in Ontario, the lowest level in at least two decades. For Canada, the repair share of total building was less than 13 percent, the lowest level since the mid 1970s.

Relatively Stable Residential Share of Total Building - Increase in Share of New Work

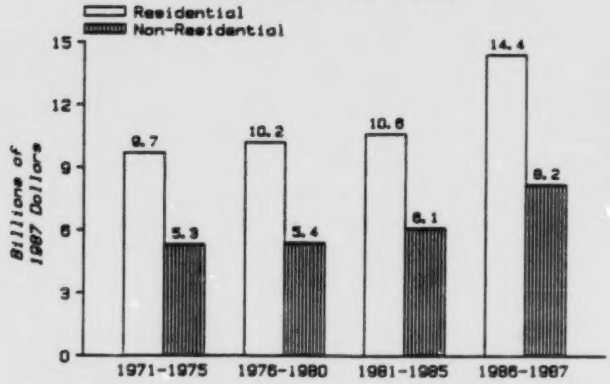
RESIDENTIAL BUILDING EXPENDITURES AS PERCENT OF TOTAL BUILDING CONSTRUCTION EXPENDITURES ONTARIO, 1971-1987



* *Includes improvements to existing dwellings.*

Source: Clayton Research Associates based on Statistics Canada data.

AVERAGE ANNUAL REAL BUILDING CONSTRUCTION EXPENDITURES BY TYPE OF WORK ONTARIO, 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

- Residential building work accounts for almost two-thirds of all Ontario building work. On an average annual basis, its share has been relatively stable around 61-63 percent since the early 1970s.

- The share of total building expenditures accounted for by new residential work increased slightly in the past few years. The residential share of total building construction spending increased from 53 percent in 1981-1985 to 58 percent in 1986-1987.*

- Repair work on residential buildings dropped from 8 percent to 5 percent as a share of total real building expenditures in the same period.

- In 1987 dollars, spending on residential building increased 36 percent from an annual average of $10.6 billion in the 1981-1985 period to $14.4 billion in 1986-1987. Spending on non-residential building work rose 24 percent from an average of $6.1 billion (in 1987 dollars) in the first half of the 1980s to $8.2 billion in 1986-1987.

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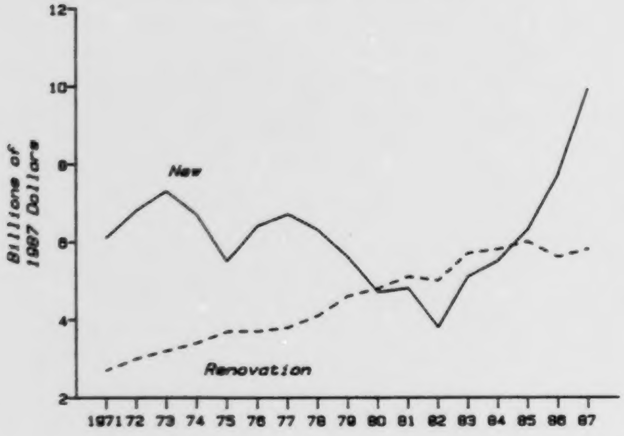
* Statistics Canada defines new construction work to include improvements to existing buildings, therefore much of what would generally be considered to be renovation work is included in new work in these statistics. The analysis on the next page groups improvements to existing dwellings with repair work to yield estimates of renovation spending.

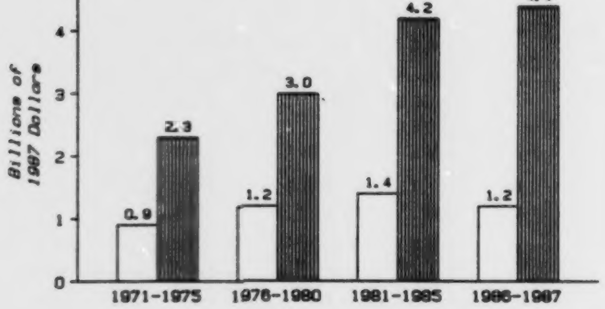
Dramatic Increase in New Residential Construction Since Recession

REAL RESIDENTIAL CONSTRUCTION EXPENDITURES
ON NEW AND RENOVATION WORK
ONTARIO, 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

AVERAGE ANNUAL REAL REPAIR AND IMPROVEMENT
EXPENDITURES ON EXISTING RESIDENTIAL BUILDINGS
ONTARIO, 1971-1987

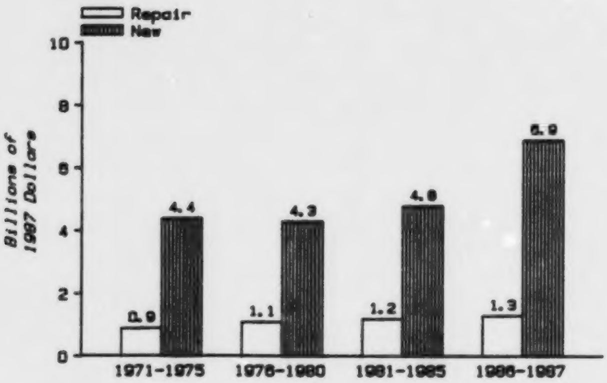


Source: Clayton Research Associates based on Statistics Canada data.

- Spending on new residential construction has increased dramatically since the recession. Expenditures on new residential construction (excluding improvements to existing buildings) totalled $9.9 billion in Ontario in 1987 - well over double the expenditures of $3.8 billion in 1982 (in 1987 dollars).
- Spending on new dwellings dropped significantly in the late 1970s and early 1980s before the recent recovery.
- Real renovation spending is much less volatile but has increased progressively since the early 1970s. The apparent levelling off of renovation spending in the past few years is perhaps at least partially due to the conversion of expenditure data from current to constant 1987 dollars.
- As defined here, renovations include both improvements to existing dwellings (normally included with work on new dwellings in the published Statistics Canada data) and repairs.
- Spending on improvements has been the main factor behind the growth in renovation spending over the period since the early 1970s. Average annual Ontario improvement expenditures were $4.4 billion in 1986-1987 (1987 dollars) - up from $2.3 billion in 1971-1975.

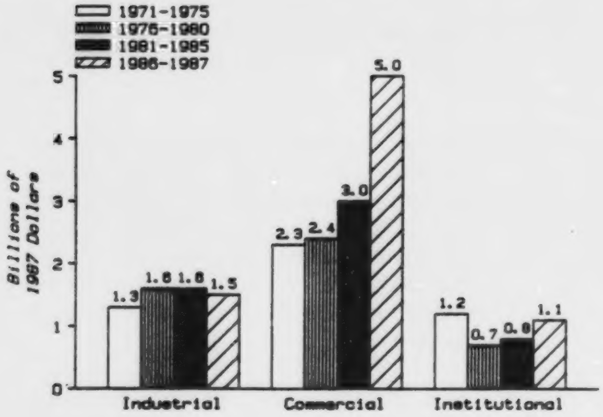
Commercial Buildings - The Reason for Strength in New Non-Residential Building

AVERAGE ANNUAL REAL NON-RESIDENTIAL BUILDING EXPENDITURES, ONTARIO, 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

AVERAGE ANNUAL REAL NON-RESIDENTIAL BUILDING EXPENDITURES BY TYPE OF BUILDING* ONTARIO, 1971-1985



** Expenditures on other non-residential buildings are not shown here.*

Source: Clayton Research Associates based on Statistics Canada data.

- As with new residential construction, there has been a substantial rise in real spending on new non-residential building in Ontario in the past few years. Average annual spending increased to $6.9 billion (in 1987 dollars) in the 1986-1987 period, up significantly from the average of the 1970s and early 1980s.

- Expenditures on repairs to non-residential buildings have increased progressively since 1971 on an average annual basis. In 1986-1987 they averaged $1.3 billion.

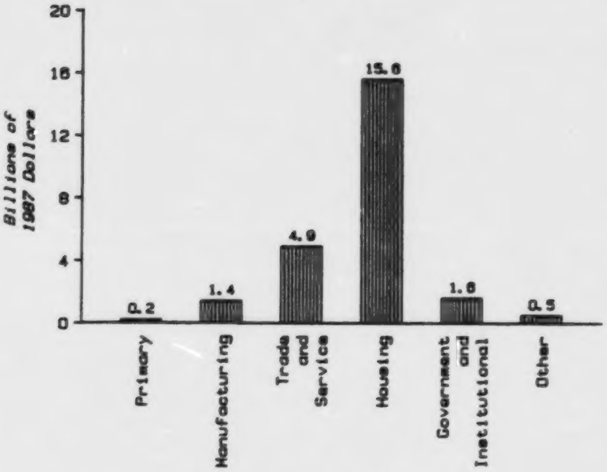
- The source of the strength in non-residential building in Ontario has been spending on commercial buildings which averaged $5.0 billion (1987 dollars) in 1986-1987 - well above the levels of the previous 15 years.

- Spending on institutional building has also increased significantly in 1986-1987 but still comprises a relatively small share of total expenditures on non-residential building.

- In contrast to commercial and institutional buildings, spending on industrial buildings has been relatively stable on an average annual basis over the past 12 years.

Housing - Biggest Consumer of Building Construction; Trade and Services Next Most Important

CONSUMERS OF BUILDING CONSTRUCTION
VALUE OF CONSTRUCTION PURCHASED BY INDUSTRY
ONTARIO, 1987

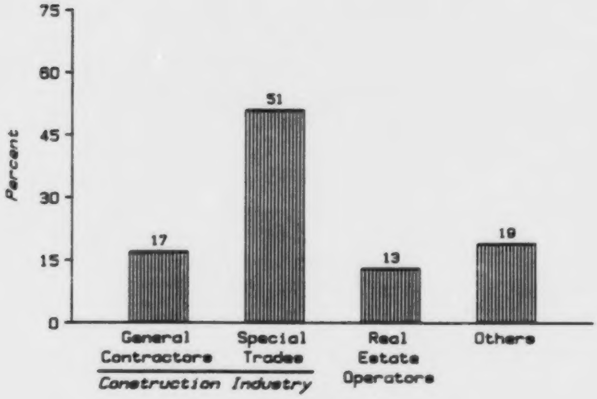


Source: Statistics Canada.

- As noted previously, residential construction comprises more than half of all building construction work in Ontario. In 1987, housing accounted for 65 percent of building work.
- Disaggregating non-residential work by industry provides insights as to the sectors which stimulate building work. The trade and service sectors together accounted for 20 percent of total building spending (and 58 percent of non-residential spending). Manufacturing and government/institutions each accounted for about 6 percent of total building.

Special Trades Contractors Account for Almost Half of Total Construction Output

PRODUCERS OF BUILDING CONSTRUCTION ACTIVITY
ONTARIO, 1985

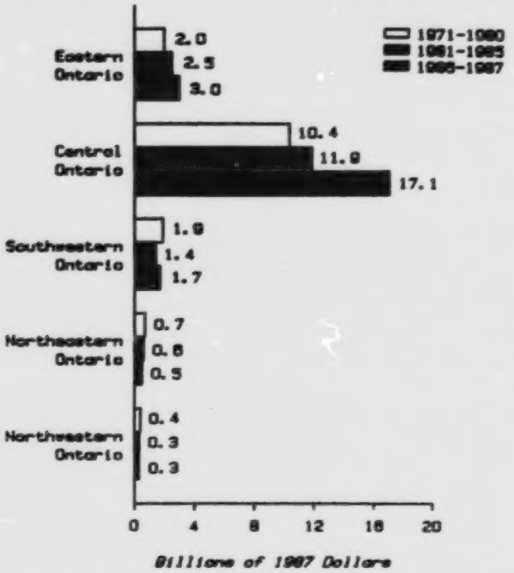


Source: Clayton Research Associates based on Statistics Canada data.

- The importance of special trades contractors to building construction is evidenced by the fact that they accounted for over half of Ontario's building output in 1985 (the latest year for which data are available).
- General contractors accounted for 17 percent of total building construction in 1985, while real estate operators (including developers) accounted for only 13 percent - the lowest share.
- The "others" category is comprised mainly of homeowners undertaking work on their own dwellings.

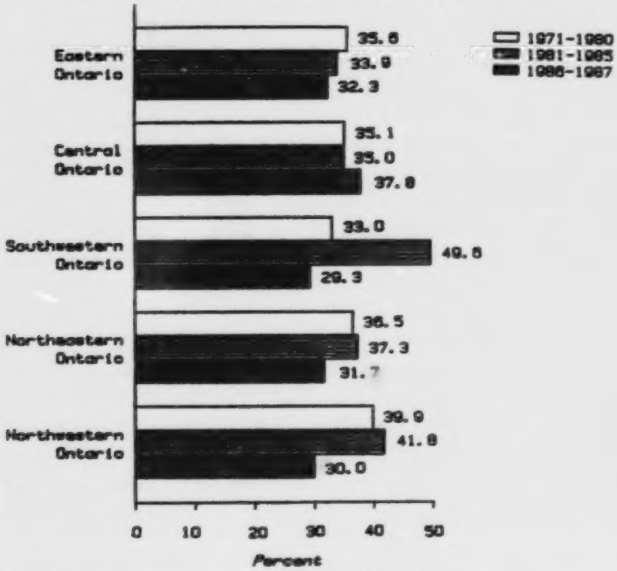
Central Region Dominates Building Construction in Ontario

AVERAGE ANNUAL BUILDING CONSTRUCTION EXPENDITURES BY REGION, ONTARIO 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

AVERAGE ANNUAL NON-RESIDENTIAL BUILDING CONSTRUCTION EXPENDITURES AS PERCENT OF TOTAL BUILDING EXPENDITURES BY REGION, ONTARIO, 1971-1987



Source: Clayton Research Associates based on Statistics Canada data.

- Central Ontario, including the major centres of Toronto, Hamilton, Oshawa and Kitchener, accounts for most building activity in the province. The region accounted for over 75 percent of total building expenditures in Ontario in 1986-1987, up slightly from the estimated two-thirds share in 1976-1980 and 69 percent share in the early 1970s.

- Eastern Ontario accounted for the next largest share, about 13 percent in 1986-1987 (about the same level as in the 1970s). Southwestern Ontario accounted for only 8 percent in 1986-1987, down from 11-13 percent in the 1970s.

- Northern Ontario accounted for only 3 percent of provincial building activity in 1986-1987 - well below the 5-8 percent level of the 1971-1985 period.

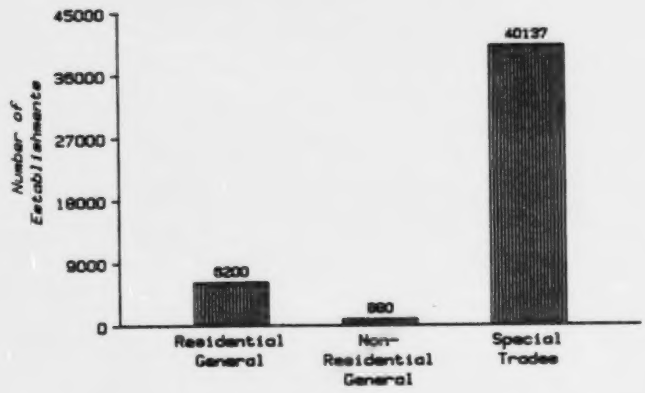
- Except for Central Ontario, all regions experienced a decline in the non-residential share of total building activity in 1986-1987, compared to 1981-1985. Southwestern Ontario had the largest drop (from an abnormal high of almost 50 percent in 1981-1985).

PROFILES OF BUILDING INDUSTRY PARTICIPANTS

This section reviews some of the characteristics of participants in the building industry - defined here to include not only building construction firms and their workers, but also other industries which provide necessary inputs to construction.

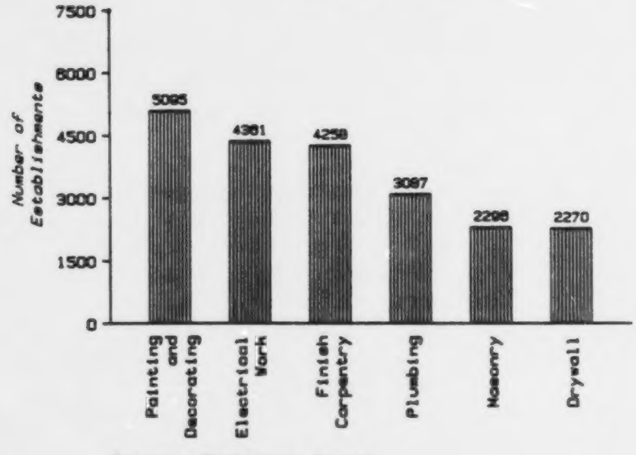
Special Trades Contractors Dominate Building Contracting Industry

NUMBER OF BUILDING CONSTRUCTION FIRMS
ONTARIO. 1985



Source: Statistics Canada.

NUMBER OF SPECIAL TRADE CONTRACTORS
BY TYPE OF TRADE
ONTARIO. 1985

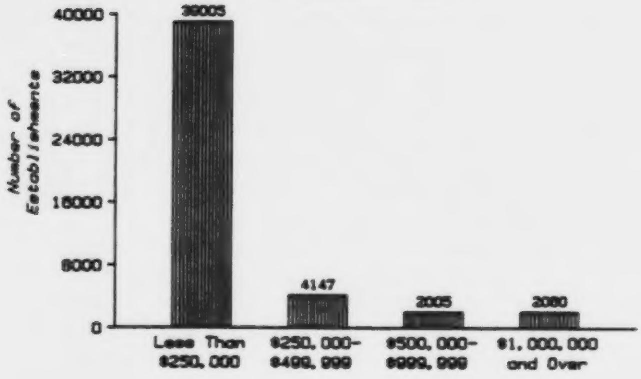


Source: Statistics Canada.

- Special trades contractors comprise 85 percent of all building contracting firms in Ontario. In 1985, the latest year for which data are available, residential and non-residential general building contractors accounted for only 13 percent and 2 percent, respectively, of all building contractors.
- The special trades contractors comprise a large variety of specialties ranging from painting and decorating (13 percent of all special trades contractors in the province in 1985) to environmental controls (only 14 firms).
- The six most numerous types of special trades contractors in Ontario in 1985 specialized in painting and decorating, electrical work, finish carpentry, plumbing, masonry and drywalling. Together, firms in these six trades comprised over half of all special trades contractors in the province.
- Statistics Canada identifies a further 36 types of special trades contractors in Ontario.

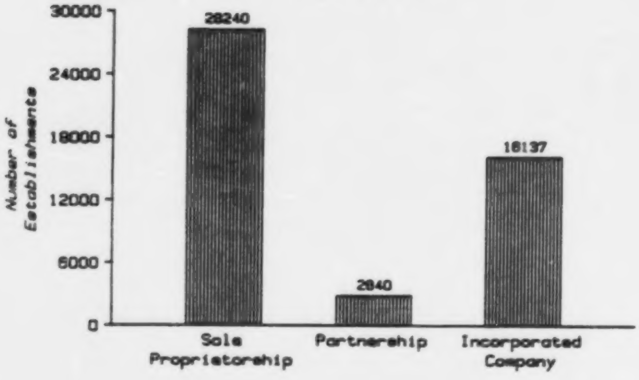
Contractors Mostly Small Sole Proprietorship Firms

NUMBER OF BUILDING CONSTRUCTION FIRMS
BY SIZE OF OUTPUT
ONTARIO, 1985



Source: Statistics Canada.

NUMBER OF BUILDING CONSTRUCTION FIRMS
BY LEGAL ENTITY
ONTARIO, 1985



Source: Statistics Canada.

- Most contracting firms are very small operations - less than 5 percent of general and special trades contracting firms had construction output (operating revenue less payments to sub-contractors) of $1 million or more in 1985. Over 80 percent had 1985 output of less than $250,000.

- Almost half of the special trades contractors had 1985 construction output below $50,000.

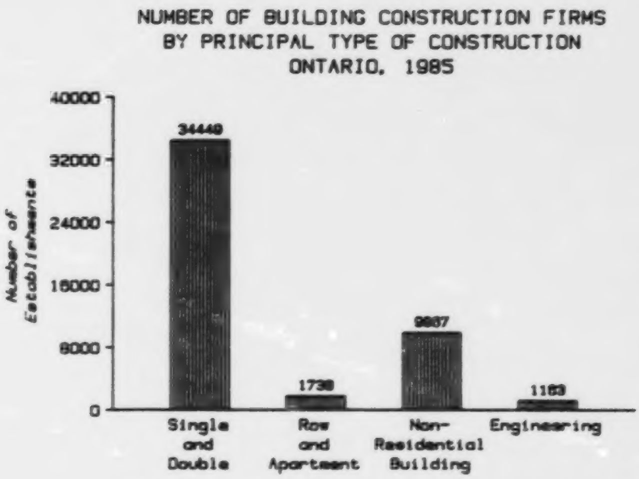
- Non-residential general building contractors tend to be larger: 41 percent had output of $1 million or more in 1985 and 6 percent were above $10 million.

- Seventy-six percent of residential general contractors had 1985 output of less than $250,000.

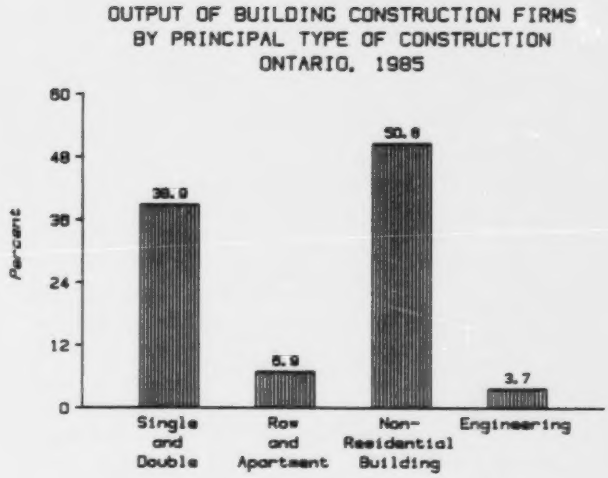
- The predominance of small firms in the contracting industry is further illustrated by the fact that 60 percent of the contracting firms in Ontario in 1985 were sole proprietorships; a further 6 percent were partnerships.

- Non-residential general contractors generally tend to be incorporated companies (83 percent in 1985). The proportion of incorporated companies is much lower among residential general contractors (38 percent) and special trades contractors (33 percent).

Smaller Firms Concentrate on Residential Building, Fewer But Larger Firms Build Non-Residential



Source: Statistics Canada.



Source: Clayton Research Associates based on Statistics Canada data.

- Over three-quarters of all contractors in Ontario in 1985 (36,187 firms) indicated that residential building was their principal type of work. Most of these firms built single and double dwellings.

- While the vast majority of contracting firms undertake mostly residential work, less than half the total output of all contracting firms in Ontario in 1985 was comprised of residential building.

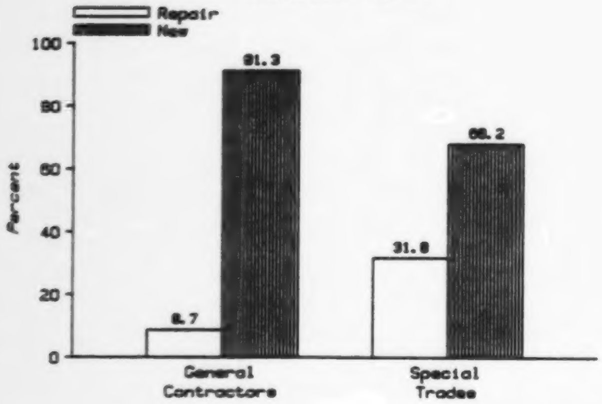
- The minority of building contracting firms which undertake principally non-residential work are much larger than the average contractor. These firms accounted for 21 percent of all contractors (9,867 firms), yet the non-residential share of total 1985 output of contractors was just over half.

- Engineering was the principal type of construction work for less than 3 percent of contractors (all were special trades contractors).

- In assessing these data, it must be recognized that contractors do not undertake all building work. As indicated on page 9, contractors accounted for only 68 percent of all building construction in Ontario in 1985. The remainder was undertaken by real estate operators and others (including homeowners).

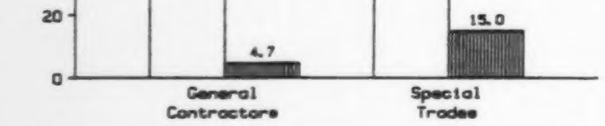
Most Contractors Undertake New Work and Concentrate on Their Specialty

OUTPUT OF BUILDING CONSTRUCTION FIRMS
BY TYPE OF WORK
ONTARIO, 1985



Source: Clayton Research Associates based on Statistics Canada data.

OUTPUT OF BUILDING CONSTRUCTION FIRMS
BY TYPE OF TRADE/SPECIALIZATION
ONTARIO, 1985



Source: Clayton Research Associates based on Statistics Canada data.

- New work accounted for over 90 percent of the output of general building contractors in Ontario in 1985 and more than two-thirds of special trades contractors' output.

- According to the Statistics Canada definitions, new work includes not only work on new dwellings, but also improvements to existing dwellings.

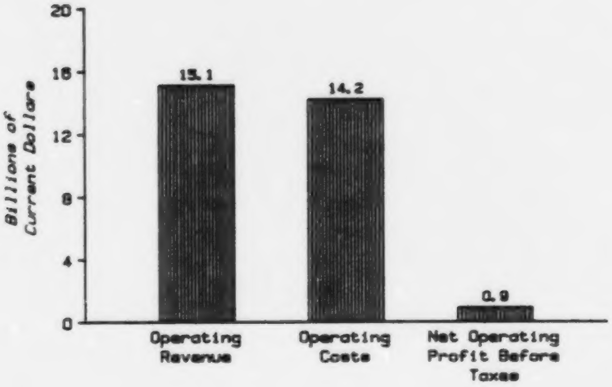
- A few types of special trades contractors had a higher proportion of repair work: firms specializing in painting and decorating, elevators and roof shingling all undertook more repair work in 1985 than new work. Other special trades with between 45 and 50 percent of their 1985 output comprised of repair work were heating and air conditioning, sheet metal and built-up roofing and siding contractors.

- Most contractors concentrate on their trade specialty. Less than 5 percent of the output of general contractors in 1985 was non-construction work. No data are available on the share comprised of work typically undertaken by special trades.

- For special trades contractors, 85 percent of total 1985 output was comprised of the firms' special trade.

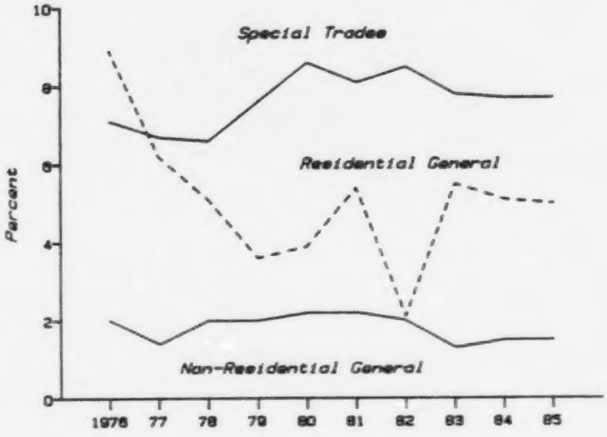
Considerable Variations in Profit Margins of Building Construction Firms

FINANCIAL DATA OF BUILDING CONSTRUCTION FIRMS
ONTARIO. 1985



Source: Statistics Canada.

PROFIT MARGINS OF BUILDING CONSTRUCTION FIRMS
ONTARIO. 1976-1985



Source: Clayton Research Associates based on Statistics Canada data.

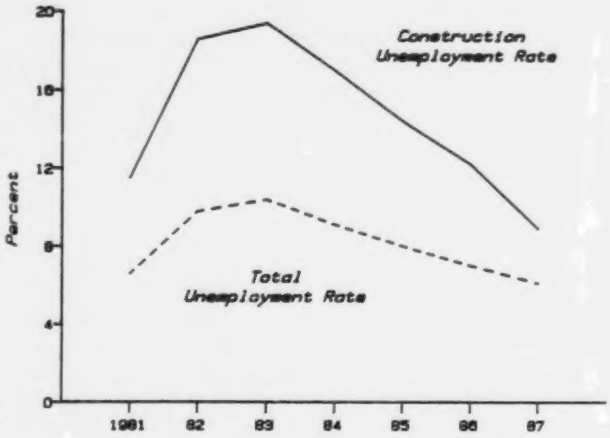
- Generally, 1985 was a relatively normal year in terms of profit margins for building contractors in Ontario. Operating revenues exceeded operating costs by 6 percent (before taxes) for all contractors taken together. This was about average for the 1976-1985 period.

- Examining the profit margins by type of contractor presents a different picture. There was a significant recovery in profit margins among residential general contractors following a very tough 1982, while non-residential general building contractors experienced a downturn in profit margins in 1983 with a more modest recovery in 1984 and 1985.

- The relatively high profit margins enjoyed by the special trades contractors are probably illusory. The special trades contractors are characterised by a large number of one and two person operations where the wages of the owners are likely not considered as costs in the same sense they would be in larger operations. Thus, apparent profits for these firms often include the wages of the person doing the work - the owner.

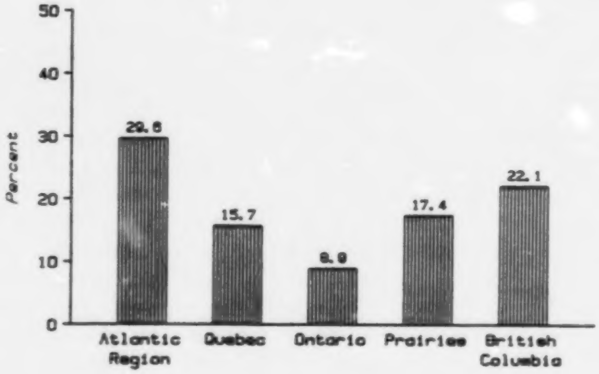
Lower Construction Unemployment in Ontario Since 1983

CONSTRUCTION AND TOTAL UNEMPLOYMENT RATES
ONTARIO, 1981-1987



Source: Statistics Canada.

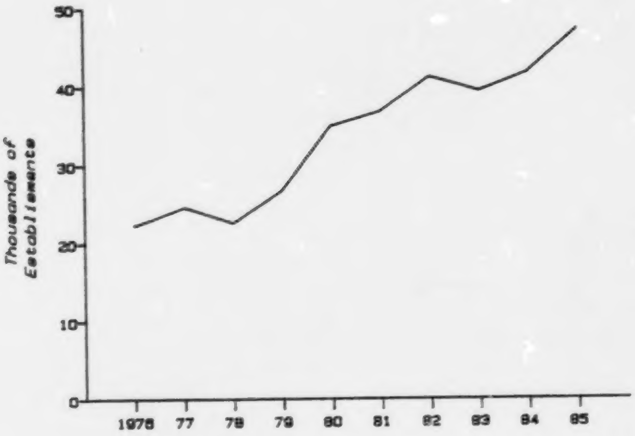
UNEMPLOYMENT RATES BY REGION
CANADA, 1987



Source: Clayton Research Associates based on Statistics Canada data.

- The construction industry suffers from chronically higher unemployment compared to the rest of the economy. In 1983, unemployment in Ontario's construction industry averaged 19.4 percent, well above the total unemployment rate of 10.4 percent.
- Since the recession, the unemployment rate in the construction industry has dropped progressively to an average of 8.9 percent in 1987.
- In September 1988 the unemployment rate among construction workers was 4.4 percent. September is near the peak of the building season; for the year as a whole, the unemployment rate will likely be higher.
- As a result of the construction boom, Ontario has by far the lowest rate of construction unemployment in Canada. In 1987, the province's construction unemployment rate averaged 8.9 percent, just over half the level of Quebec and less than one-third the level of Atlantic Canada.
- The strong recovery in construction in Ontario has influenced the rate of construction unemployment in other parts of Canada as well. Many construction workers have migrated to Ontario to work in the booming construction sector.

More Contractors Since the Recession

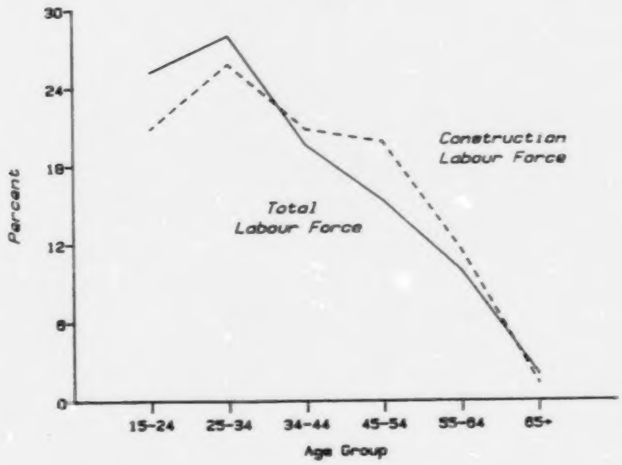


NUMBER OF BUILDING CONSTRUCTION FIRMS
ONTARIO, 1976-1985

Source: Clayton Research Associates based on Statistics Canada data.

- The upturn in construction activity in Ontario since the early 1980s has also resulted in the entry of more contractors into the industry. Since 1980, the number of contractors recorded in the annual Construction Industry Census has increased from 34,971 to 47,217 in 1985. The number of contractors dropped in 1983.
- Some of the increase may be due to changes in the data collection methodology; however, most of the increase is real.
- Most types of contractors increased in numbers in 1985 compared to 1980.

Little Difference in Ages of Construction and Total Labour Force



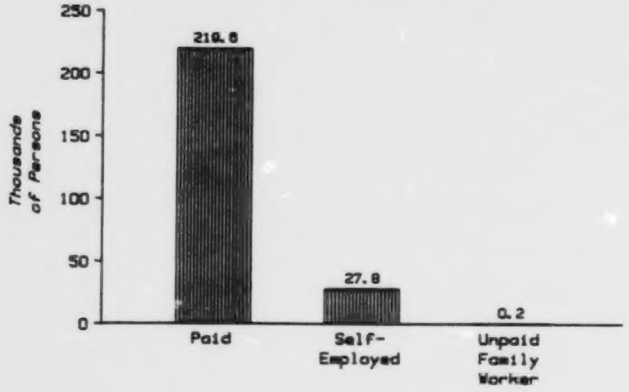
PERCENT DISTRIBUTION OF CONSTRUCTION AND
TOTAL LABOUR FORCE BY AGE GROUP
ONTARIO, 1981

Source: Clayton Research Associates based on data from the 1981 Census of Canada.

- There is little difference in the age structure of construction workers compared to all workers in Ontario. In 1981 (the latest year for which data are available), construction had fewer workers aged 15-34 and more aged 45-54 than the total labour force.
- The median age for male construction workers in Ontario in 1981 was 36.7 years. Foremen and inspectors had higher median ages (41-43) as did masons and concrete finishers.
- Only 2.0 percent of the 1981 Ontario construction labour force was comprised of females.

Construction Workers Mostly Paid Employees

CONSTRUCTION LABOUR FORCE BY CLASS OF WORKER
ONTARIO, 1981

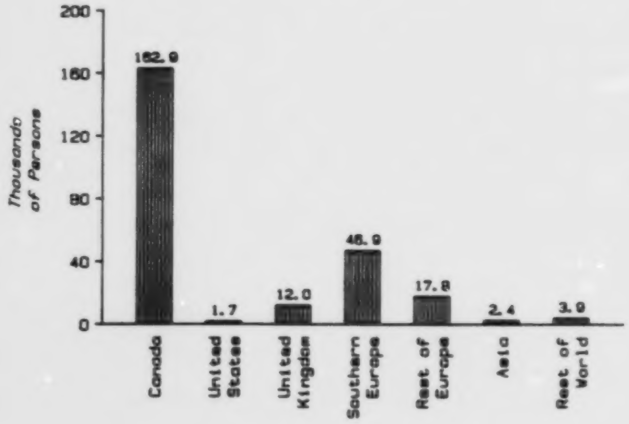


Source: 1981 Census of Canada.

- Only 11 percent of the construction labour force in Ontario in 1981 was self-employed.
- This information is available by detailed trade for the male labour force only. Trades with a higher than average proportion of self-employed workers (males) in Ontario in 1981 included painters (25 percent) and carpenters (17 percent).
- Many male workers describing themselves as self-employed are classified as foremen. They accounted for almost 30 percent of the self-employed male workers but only 3 percent of all male workers.

Canadian-Born Workers Dominate Construction Labour Force

CONSTRUCTION LABOUR FORCE BY PLACE OF BIRTH
ONTARIO, 1981

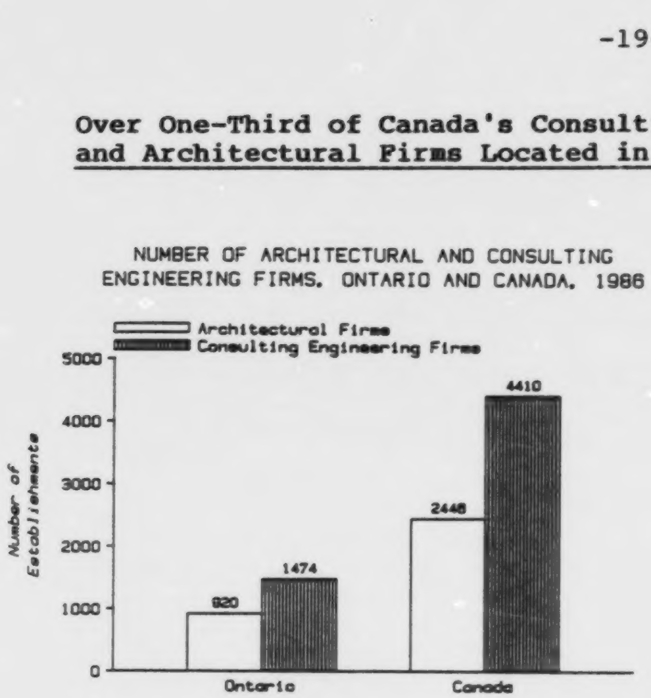


Source: 1981 Census of Canada.

- Contrary to some popular beliefs, most of Ontario's construction workers were born in Canada.
- Almost two-thirds of the province's 1981 construction labour force was born in Canada. The next largest place of birth for these workers was southern Europe (19 percent).
- Information on the birthplaces of selected trades is not published for Ontario. For Canada, brick and stone masons had the highest proportion of non-Canadian born male workers at 44 percent.

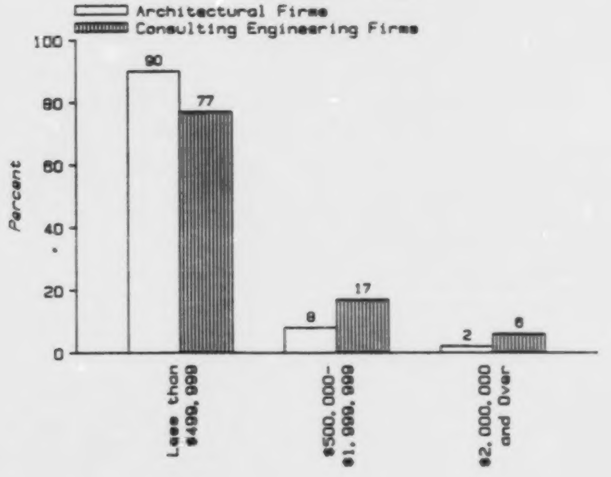
Over One-Third of Canada's Consulting Engineering and Architectural Firms Located in Ontario

NUMBER OF ARCHITECTURAL AND CONSULTING ENGINEERING FIRMS, ONTARIO AND CANADA, 1986



Source: Statistics Canada.

ARCHITECTURAL AND CONSULTING ENGINEERING FIRMS BY FEE INCOME RANGE ONTARIO, 1986

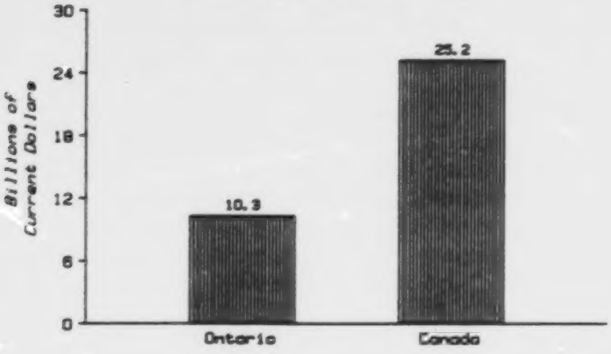


Source: Statistics Canada.

- Ontario accounted for over one-third of all Canadian architectural and consulting engineering firms in 1986, the latest year for which data are available.
- In addition, Ontario's architectural and consulting engineering firms accounted for approximately one-third of total fee income of these firms in Canada in 1986.
- Total fee income for architectural and consulting engineering firms in Ontario in 1986 was $254 million and $1,005 million, respectively.
- Most fees from work by the province's architectural and consulting engineering firms relate to projects in Canada - 99 percent for architects and 92 percent for engineers in 1986.
- Revenue resulting from Canadian building projects accounted for less than one-quarter of total revenue for Ontario consulting engineering firms in 1986. The remainder was mainly engineering work.
- Consulting engineering firms tend to be larger than architectural firms. About 6 percent of Ontario's consulting engineering firms had fee income of $2 million or more in 1986. Only 2 percent of architectural firms had $2 million or more in fee income that year.

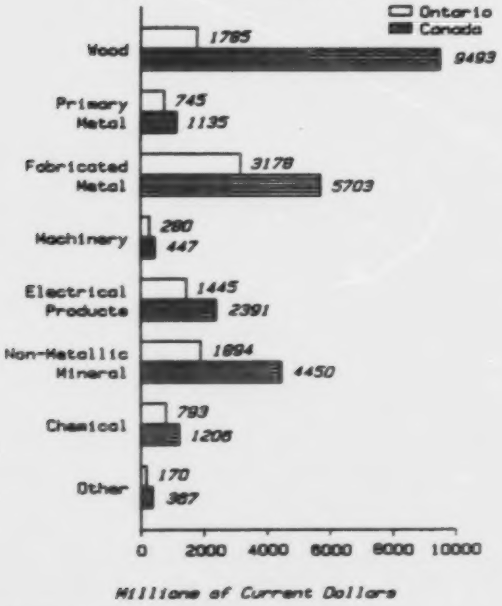
Ontario Manufacturers' Shipments of Building Products Totalled $10.3 Billion in 1985

ESTIMATED VALUE OF SHIPMENTS
OF BUILDING PRODUCTS
ONTARIO AND CANADA, 1985



Source: Clayton Research Associates based on Statistics Canada data.

ESTIMATED VALUE OF SHIPMENTS OF BUILDING
PRODUCTS BY TYPE OF MANUFACTURER
ONTARIO AND CANADA, 1985



Source: Clayton Research Associates based on Statistics Canada data.

- Manufacturers in Ontario shipped an estimated $10.3 billion worth of building products in 1985. This is more than 40 percent of the estimated total shipments of building products in Canada.

- Estimates for 1985 are the latest for which data comparable to earlier years are available from Statistics Canada.

- The composition of building product shipments by type of product illustrates the specialization of Ontario's manufacturing industries. Wood products comprise over one-third of Canada's shipments of building products, but only 17 percent of Ontario's shipments.

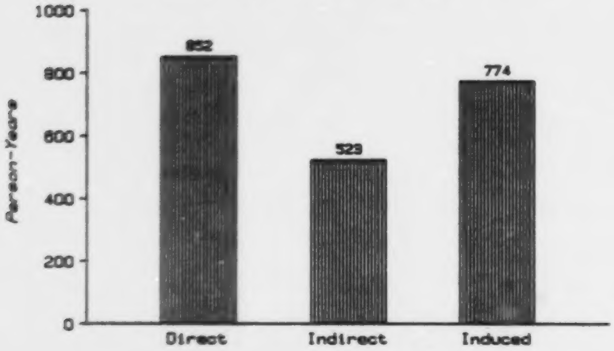
- Ontario accounts for a relatively high proportion of Canada's building product shipments of both primary and fabricated metal products, machinery, electrical products, non-metallic mineral products as well as chemical products.

IMPACTS OF THE BUILDING CONSTRUCTION INDUSTRY

This section reviews the employment and income impacts which construction work generates both in the construction industry itself and throughout the economy.

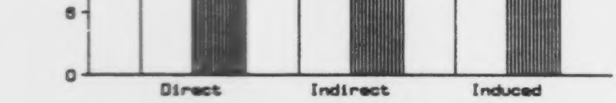
Three Rounds of Impacts for Construction Work

EMPLOYMENT IMPACTS IN ONTARIO
OF $100 MILLION OF NEW RESIDENTIAL
CONSTRUCTION IN ONTARIO, 1987



Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

INCOME IMPACTS IN ONTARIO
OF $100 MILLION OF NEW RESIDENTIAL
CONSTRUCTION IN ONTARIO, 1987

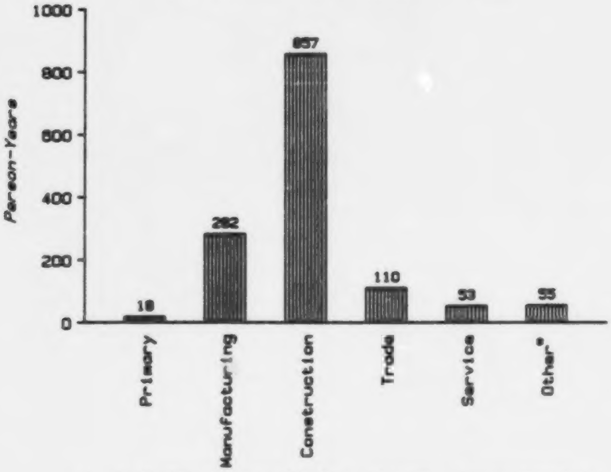


Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

- Three distinct rounds of impacts can be identified for any economic activity. For construction work they are: direct impacts - the actual jobs and income resulting from work on a construction project; indirect impacts - the jobs and income created in other industries required to produce materials and other inputs for the construction work; and induced impacts - the jobs and income created in the economy from the spending of incomes generated in the first two rounds.
- For $100 million of new residential construction spending in Ontario it is estimated that about 2,000 person-years of provincial employment are generated. Direct construction work accounts for about 850 jobs. Over 500 jobs are created in industries supplying inputs to construction. Induced employment accounts for just over one-third of the employment generated.
- The three rounds generate $112 million of income in Ontario. More than half of this is labour income, the remainder is indirect taxes and business and investment income.

Expenditures on Construction Affect All Sectors of the Economy

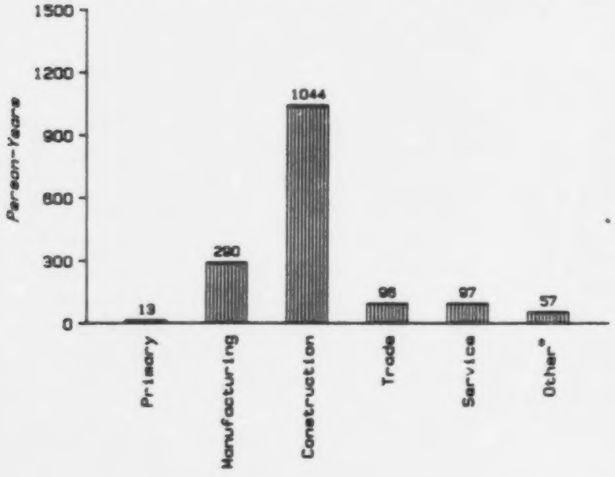
DIRECT AND INDIRECT EMPLOYMENT IMPACTS IN ONTARIO OF $100 MILLION OF NEW RESIDENTIAL CONSTRUCTION IN ONTARIO BY INDUSTRY, 1987



* *Includes transportation, storage, communication, utilities, financial, insurance and real estate industries.*

Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

DIRECT AND INDIRECT EMPLOYMENT IMPACTS IN ONTARIO OF $100 MILLION OF NEW NON-RESIDENTIAL BUILDING CONSTRUCTION IN ONTARIO BY INDUSTRY, 1987



* *Includes transportation, storage, communication, utilities, financial, insurance and real estate industries.*

Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

- All sectors of the economy are affected by spending on construction. The sector where most of the jobs are created is, of course, construction; however, a significant number of jobs are created in other sectors as well.

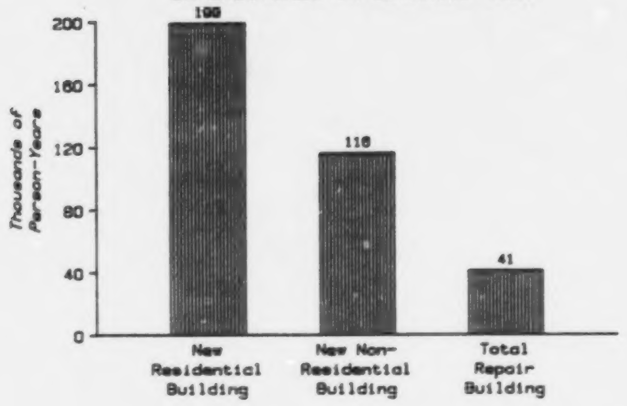
- The analysis here concentrates on the direct and indirect jobs created. Induced jobs, while relatively large in number, are no different for a given amount of income generated by construction than for the same amount of income generated by any other activity.

- For $100 million of new residential construction spending in Ontario, about 850 direct and indirect person-years of employment are generated in the construction industry - almost all in the direct round. About 300 person-years of employment are created in manufacturing and significant employment is generated in the trade and service sectors also.

- An equivalent expenditure on new non-residential building construction generates a somewhat higher number of direct jobs than new residential construction. Spending on non-residential building has a similar wide distribution of impacts to other sectors of the economy.

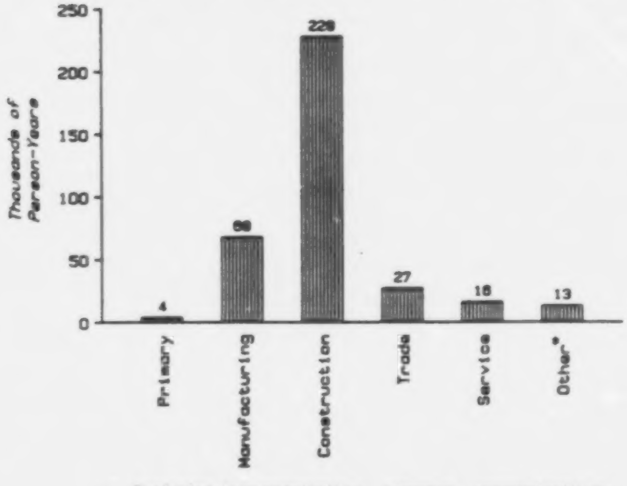
Building Construction in Ontario Generated Over 350,000 Direct and Indirect Jobs in the Province in 1987

ESTIMATED DIRECT AND INDIRECT EMPLOYMENT IMPACTS IN ONTARIO OF ACTUAL BUILDING CONSTRUCTION EXPENDITURES IN ONTARIO. 1987



Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

ESTIMATED DIRECT AND INDIRECT EMPLOYMENT IMPACTS IN ONTARIO OF ACTUAL BUILDING CONSTRUCTION EXPENDITURES IN ONTARIO BY INDUSTRY. 1987



** Includes transportation, storage, communication, utilities, financial, insurance and real estate industries.*

Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

- The $24.2 billion of building construction expenditures in Ontario in 1987 is estimated to have generated over 350,000 direct and indirect person-years of employment in the province. These jobs represent almost 7 percent of Ontario's total employment in 1987.

- Spending on new residential construction had the greatest impact; it generated almost 200,000 person-years of employment in 1987.

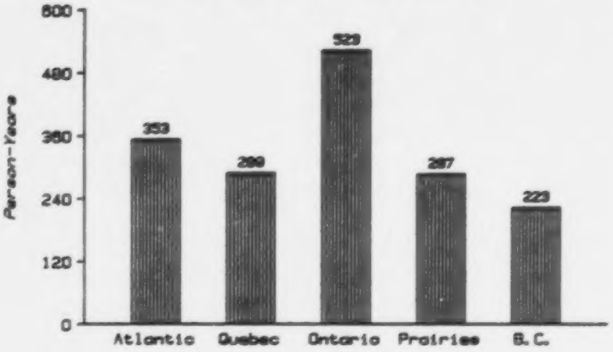
- The income generated from the over 350,000 person-years of direct and indirect employment would create a further 200,000 induced jobs in Ontario.

- Most direct and indirect jobs are created in the construction sector, however, a large number of jobs are also created in other industries. The 68,000 person-years of employment generated in the manufacturing sector represents over 6 percent of all manufacturing employment in Ontario in 1986.

- These estimates are based on the Statistics Canada 1979 interregional input-output model. The results of the model were updated to 1987 utilizing construction price indexes; however, the estimates do not allow for any changes in inputs to construction (or the jobs needed to create them) since 1979.

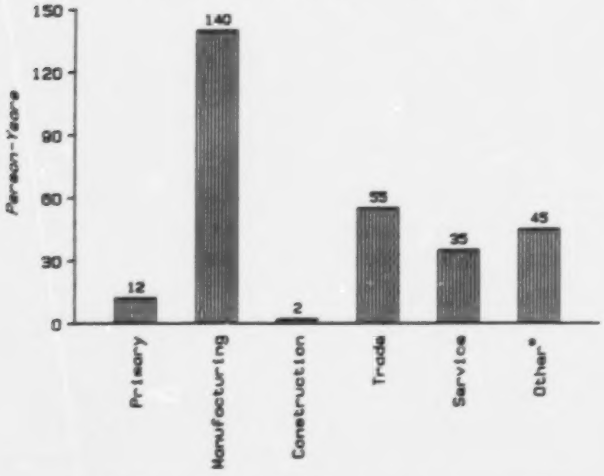
Construction in Other Provinces Generates Jobs in Ontario as Well

ESTIMATED INDIRECT EMPLOYMENT IMPACTS IN ONTARIO OF $100 MILLION OF NEW RESIDENTIAL CONSTRUCTION IN EACH REGION, 1987



Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

INDIRECT EMPLOYMENT IMPACTS IN ONTARIO OF $100 MILLION OF NEW RESIDENTIAL CONSTRUCTION IN QUEBEC, 1987



** Includes transportation, storage, communication, utilities, financial, insurance and real estate industries.*

Source: Clayton Research Associates based on Statistics Canada input-output tabulations.

- Ontario industry produces inputs for construction in all parts of Canada. Therefore, construction spending in other regions also has an impact on employment in Ontario.

- It is estimated that $100 million of new residential construction expenditures in Ontario in 1987 created over 500 person-years of indirect employment in the province. Similar expenditures in other regions create an estimated 220-350 person-years of indirect employment in the province of Ontario.

- Construction spending in the Atlantic region has the largest indirect impact in Ontario (per dollar of spending). For $100 million of spending on residential construction in Atlantic Canada, about 350 person-years of indirect employment are generated in Ontario.

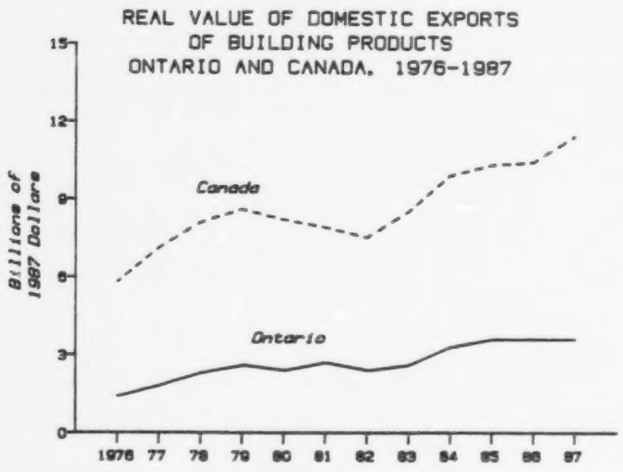
- The impacts of new non-residential construction expenditures in other regions are similar to those for new residential construction.

- Employment impacts in Ontario resulting from construction spending in other regions occur largely in the manufacturing sector. Using spending on new residential construction in Quebec as an example, it is clear that trade and services are also large beneficiaries.

EXPORTS AND IMPORTS OF BUILDING PRODUCTS

This section presents information on domestic exports and imports of building products from Canada and Ontario. Domestic exports refer to exports sourced in Canada - as opposed to re-exports of goods made elsewhere. Ontario's imports and exports refer to trade with other countries, not with other parts of Canada.

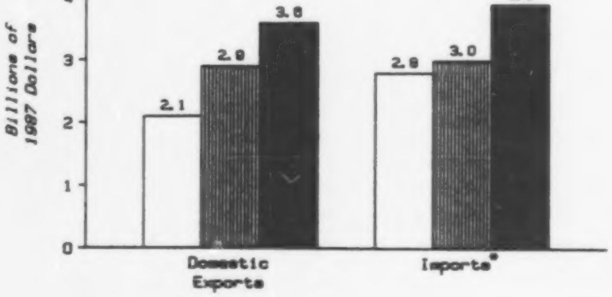
Ontario Building Product Exports Total $3.6 Billion



REAL VALUE OF DOMESTIC EXPORTS OF BUILDING PRODUCTS ONTARIO AND CANADA, 1976-1987

Source: Clayton Research Associates based on Statistics Canada data.

REAL VALUE OF EXPORTS AND IMPORTS OF BUILDING PRODUCTS, ONTARIO, 1976-1987



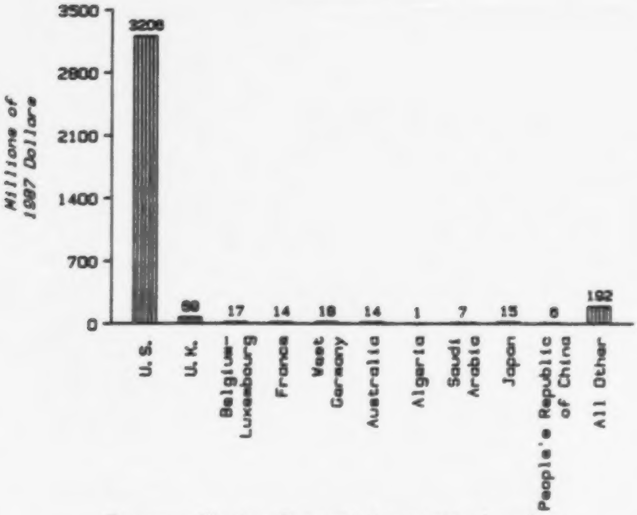
* *Imports by province of clearing.*

Source: Clayton Research Associates based on Statistics Canada data.

- Ontario's building product exports increased in real terms in the first half of the 1980s but levelled off in 1986-1987. In 1987, Ontario exports totalled $3.6 billion, 70 percent above the 1976-1980 annual average (in 1987 dollars).
- Goods exported by Ontario accounted for one-third of Canada's building product exports in 1986-1987 - about the same as in 1981-1985 but higher than the 28 percent share in 1976-1980.
- Ontario's building product trade balance was negative in 1986-1987 - imports exceeded exports by an average annual $300 million (1987 dollars). The deficit increased in 1986 and 1987 as a result of the higher level of building activity in Ontario.
- Data on Ontario exports refer to building products loaded in the province for export; they include some transshipments from other provinces. Data on imports are available only by province of clearance, i.e., products which clear customs in Ontario regardless of the final destination.

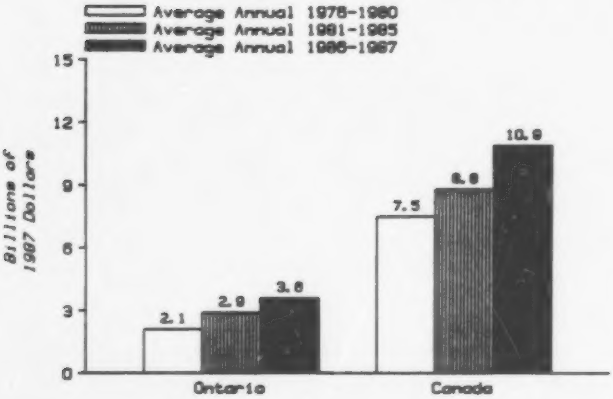
United States - The Main Market for Exports of Ontario Building Products

DOMESTIC EXPORTS OF BUILDING PRODUCTS
BY SELECTED COUNTRY
ONTARIO, 1987



Source: Clayton Research Associates based on Statistics Canada data.

REAL VALUE OF DOMESTIC EXPORTS OF
BUILDING PRODUCTS
ONTARIO AND CANADA, 1976-1987



Source: Clayton Research Associates based on Statistics Canada data.

- The U.S. is by far the most important export market for building products from Ontario. In 1987, exports of Ontario building products to the U.S. totalled $3.2 billion - 90 percent of Ontario's total building product exports.

- The United Kingdom is the next largest importer of Ontario's building products with $69 million worth of products in 1987.

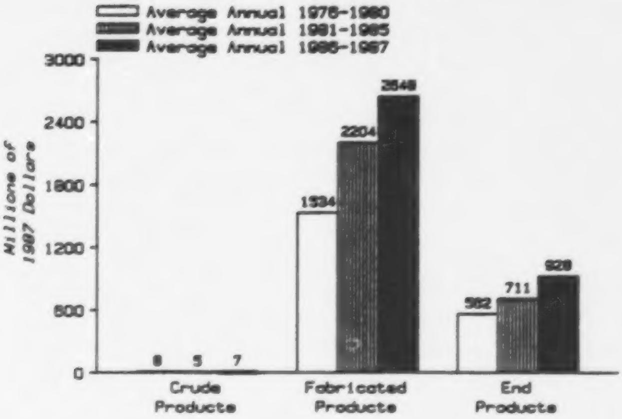
- The value of Ontario's exports of building products has been increasing progressively since 1976. Despite a slowdown in the early 1980s, the real value of average annual Ontario building product exports increased by almost 40 percent between the 1976-1980 and 1981-1985 periods.

- In 1986-1987, Ontario's building product exports were similar (in real terms) to exports in 1985. However, compared to the 1981-1985 average, 1986-1987 exports were almost one-quarter higher.

- Most of the increase in Ontario's exports of building products over the past decade was in semi-finished products such as lumber and metal products, though exports of finished products increased significantly also.

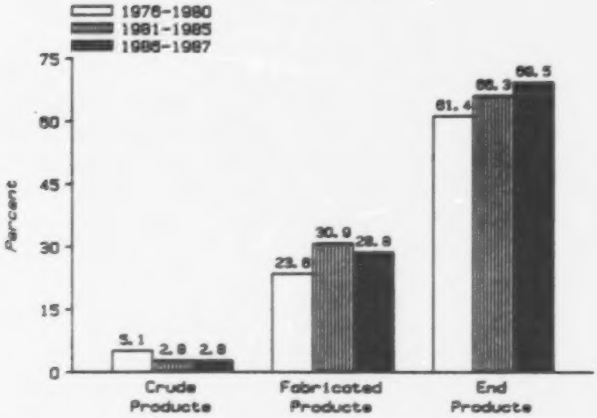
Most Ontario Building Product Exports are Partly Finished Products

REAL VALUE OF DOMESTIC EXPORTS
BY DEGREE OF PROCESSING
ONTARIO, 1976-1987



Source: Clayton Research Associates based on Statistics Canada data.

DOMESTIC EXPORTS BY DEGREE OF PROCESSING
ONTARIO AS A PERCENT OF CANADA
1976-1987



Source: Clayton Research Associates based on Statistics Canada data.

- Exports of building products have been disaggregated into three categories: crude products - raw products or products subject to preliminary processing only (such as logs or stone); fabricated products - products which have undergone some level of processing but are not finished products (such as lumber, wire and bricks); and end products - finished goods such as furnaces, sinks and tools.

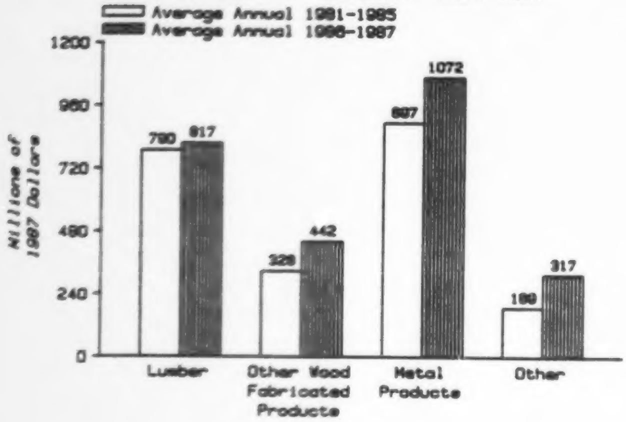
- Most of Ontario's building product exports are fabricated products. Over the 1986-1987 period, these accounted for almost three-quarters of the province's total building product exports.

- For Canada, the comparable share of total building product exports comprised of fabricated products was 85 percent during the last two years.

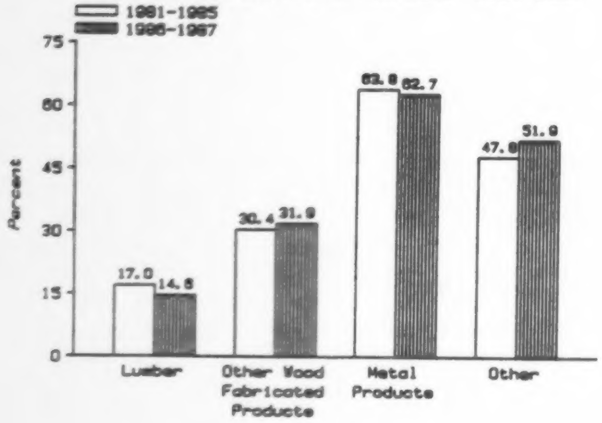
- While end products accounted for only one-quarter of Ontario's building product exports in 1986-1987, the province accounts for the vast majority of Canada's end building product exports - almost 70 percent in 1986-1987.

- For fabricated and crude building products, the Ontario share of total Canadian exports to the U.S. were much lower than for end products.

Metal Products and Lumber Account for Most Ontario Fabricated Building Product Exports


REAL VALUE OF DOMESTIC EXPORTS OF FABRICATED BUILDING PRODUCTS BY TYPE OF COMMODITY, ONTARIO, 1981-1987

Source: Clayton Research Associates based on Statistics Canada data.


DOMESTIC EXPORTS OF FABRICATED BUILDING PRODUCTS BY TYPE OF COMMODITY ONTARIO AS PERCENT OF CANADA, 1981-1987

Source: Clayton Research Associates based on Statistics Canada data.

- Metal products and lumber dominate Ontario's exports of fabricated building products (which accounted for almost three-quarters of Ontario building product exports in 1986-1987).

- Metal products, mostly iron and steel products (such as structural steel and pipes) and metal fabricated products (such as screws and valves) comprised 40 percent of total fabricated building product exports from Ontario in 1986-1987.

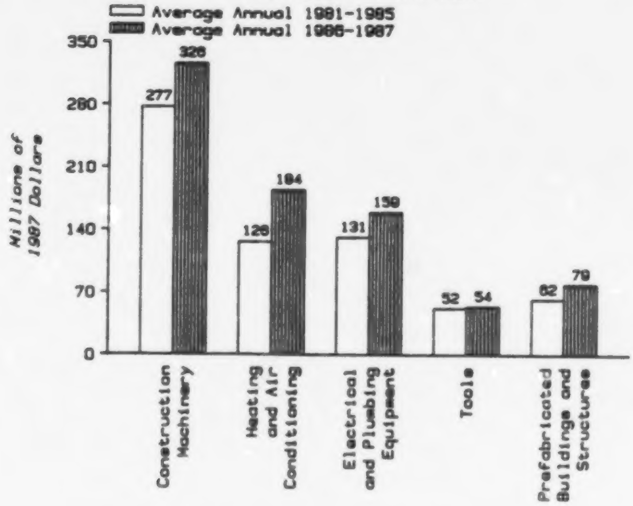
- Lumber, mainly softwood lumber, comprised 30 percent of total fabricated building product exports from Ontario in the latest period.

- Ontario accounts for over 60 percent of the metal product exports from Canada. The Ontario share of wood products is much lower due to the predominance of B.C. lumber exports. Much of the lumber exported from B.C. to the U.S. is, however, exported through Ontario border crossings and some of this is believed to show up in the Ontario statistics.

- The "Other" category includes products such as non-metallic mineral products (e.g., cement and gypsum wallboard). Ontario accounted for over half of total Canadian exports of these building products to the U.S. in 1986-1987.

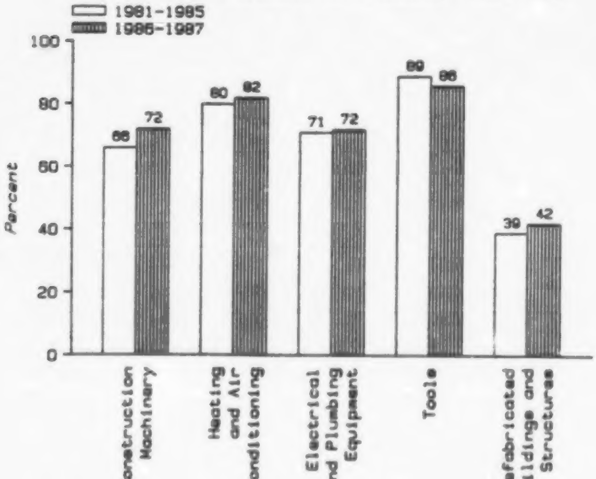
Construction Machinery Accounts for Largest Share of Ontario End Building Product Exports

REAL VALUE OF DOMESTIC EXPORTS OF END BUILDING PRODUCTS BY TYPE OF COMMODITY ONTARIO, 1981-1987



Source: Clayton Research Associates based on Statistics Canada data.

DOMESTICS EXPORTS OF END BUILDING PRODUCTS BY TYPE OF COMMODITY ONTARIO AS PERCENT OF CANADA, 1981-1987



Source: Clayton Research Associates based on Statistics Canada data.

- The five main types of end building product exports from Ontario are construction machinery, heating and air conditioning products, electrical and plumbing equipment, tools, and prefabricated buildings and structures. In 1986-1987 these five products accounted for 87 percent of Ontario's total end building product exports.

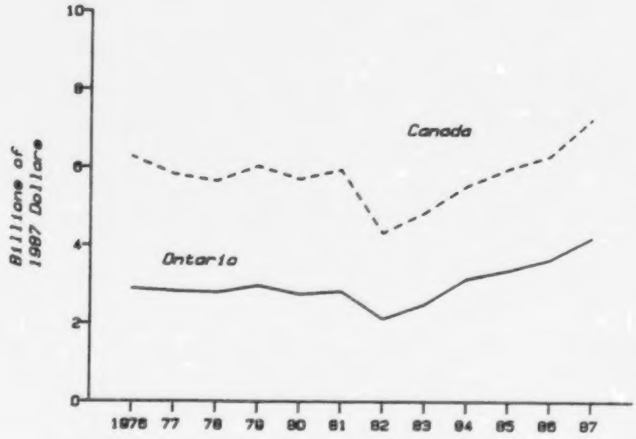
- The 1986-1987 shares of Ontario end building product exports accounted for by each product type were:
  - construction machinery (e.g. bulldozer blades and cranes): 35 percent;
  - heating and air conditioning equipment (e.g. furnaces and air conditioners): 20 percent;
  - electrical equipment (e.g. circuit breakers and electric sockets): 17 percent;
  - prefabricated buildings and structures (e.g. wooden and metal panelling and portable buildings): 9 percent; and
  - tools (e.g. hammers and saw blades): 6 percent.

- Real average annual exports of all these end products increased by 30 percent in 1986-1987 compared to 1981-1985.

- Ontario accounts for over 70 percent of Canadian exports of each of these end products with the exception of prefabricated buildings and structures.

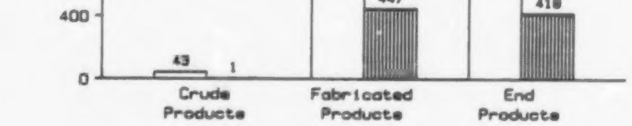
Imports of Building Products Up Substantially in 1986-1987

REAL VALUE OF IMPORTS OF BUILDING PRODUCTS
ONTARIO AND CANADA, 1976-1987



Source: Clayton Research Associates based on Statistics Canada data.

REAL VALUE OF IMPORTS OF BUILDING PRODUCTS
BY COUNTRY OF ORIGIN, ONTARIO 1987

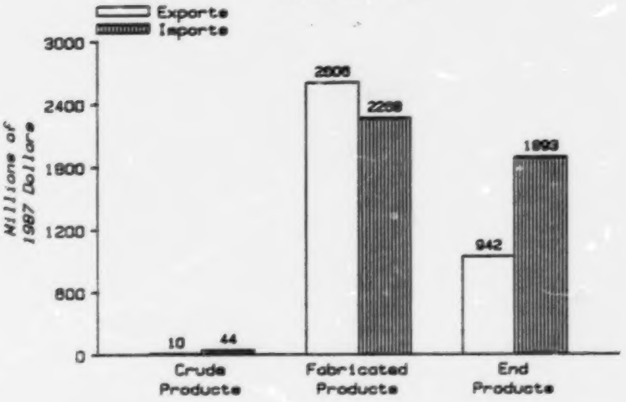


Source: Clayton Research Associates based on Statistics Canada data.

- As a result of the building boom in Ontario since the 1981-1982 recession, imports of building products to the province have increased significantly.
- In 1987, imports of building products totalled $4.2 billion, the highest level ever in real terms and double the $2.1 billion in imports in 1982.
- Many of the imports assigned to Ontario are probably used in building in other provinces. Because the imports data from Statistics Canada are on a "province of clearing" basis, there is no way to identify the proportion of imports ultimately used in Ontario.
- As is the case with exports, the vast majority of building product imports to Ontario are from the U.S. - almost 80 percent in 1987. While substantial, this is below the 84 percent figure for the 1976-1980 period.
- The share of Ontario building product imports accounted for by the U.S. in 1987 is slightly lower for end products (78 percent) than for fabricated products (80 percent) or crude products (97 percent).
- For Canada as a whole the U.S. share of building product imports is 72 percent - lower than the Ontario figure.

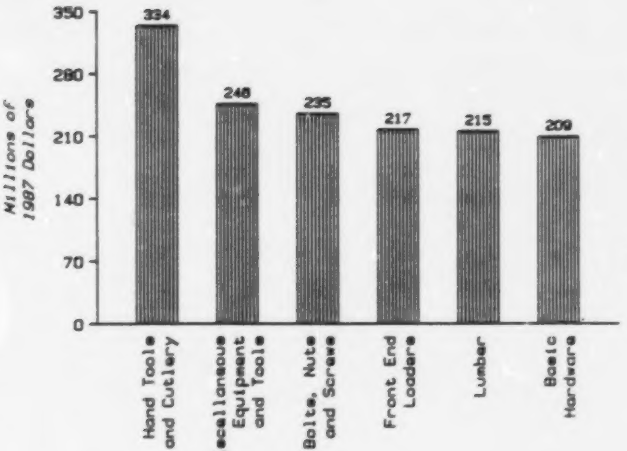
More Finished Goods Among Imports of Building Products

REAL VALUE OF IMPORTS AND DOMESTIC EXPORTS OF BUILDING PRODUCTS BY DEGREE OF PROCESSING ONTARIO, 1987



Source: Clayton Research Associates based on Statistics Canada data.

REAL VALUE OF IMPORTS OF BUILDING PRODUCTS ONTARIO, 1987



Source: Clayton Research Associates based on Statistics Canada data.

- Imports of building products to Ontario are much more heavily weighted towards end products than is the case with exports.

- End products comprised 45 percent of imports of building products to Ontario in 1987; the comparable share for exports was 26 percent. The share of imports comprised of end products has remained relatively stable over the past decade.

- Whereas exports of building products from Ontario tend to be concentrated into a few distinct products, especially metal products and lumber, imports are spread across a wide variety of fabricated and end products. No specific product accounts for more than 10 percent of total building product imports.

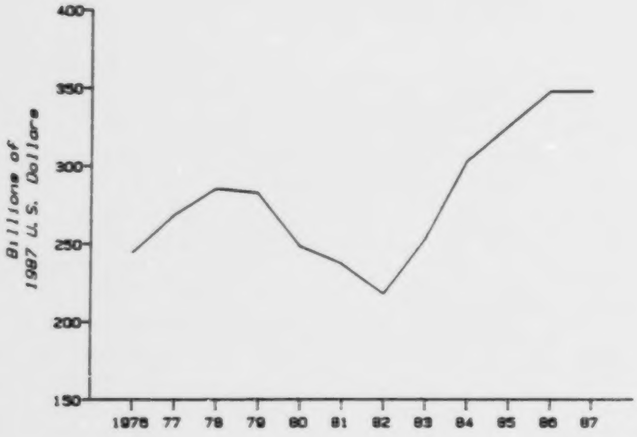
- The most prominent types of import products are tools, equipment, hardware and lumber. In most cases, the vast majority came from the Unites States. However, in some cases such as hand tools, the U.S. share of imports drops to as low as 60 percent.

U.S. BUILDING INDUSTRY ACTIVITY AND EXPORTS TO THE U.S.

This section briefly reviews trends in building construction in the largest Canadian building product export market - the United States.

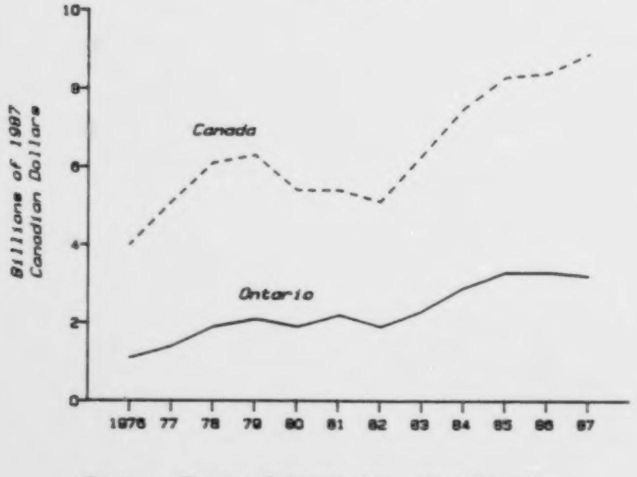
Exports Mirror Trends in U.S. Building Construction

REAL BUILDING CONSTRUCTION EXPENDITURES
UNITED STATES, 1976-1987



Source: Clayton Research Associates based on data from U.S. Department of Commerce, Bureau of the Census.

REAL VALUE OF EXPORTS OF BUILDING PRODUCTS
FROM ONTARIO AND CANADA TO THE UNITED STATES
1976-1987

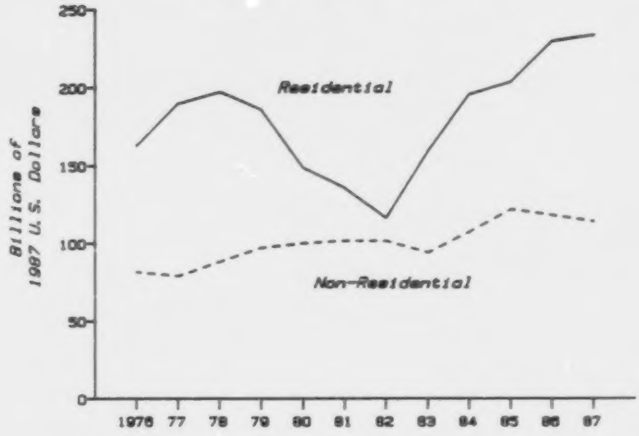


Source: Clayton Research Associates based on Statistics Canada data.

- Expenditures on building construction in the U.S. levelled off in 1987 at the same volume (in real terms) as in 1986.
- A total of $348 billion (U.S.) was spent on building construction in the U.S. in both 1986 and 1987, well above the average annual levels of real 1987 dollar expenditures in both 1976-1980 ($266 billion) and 1981-1985 ($267 billion).
- The upturn in U.S. building construction activity since 1982 is reflected in the growth of exports of building products to the U.S. from both Ontario and other parts of Canada.
- Despite the recent rise in Canadian exports of building products to the U.S., the value of these exports in 1987 ($8.9 billion in Canadian dollars) still accounted for less than 3 percent of total U.S. building construction expenditures in that year.
- Ontario's building product exports to the U.S. in 1987 totalled $3.2 billion - slightly less than 1 percent of U.S. building expenditures.

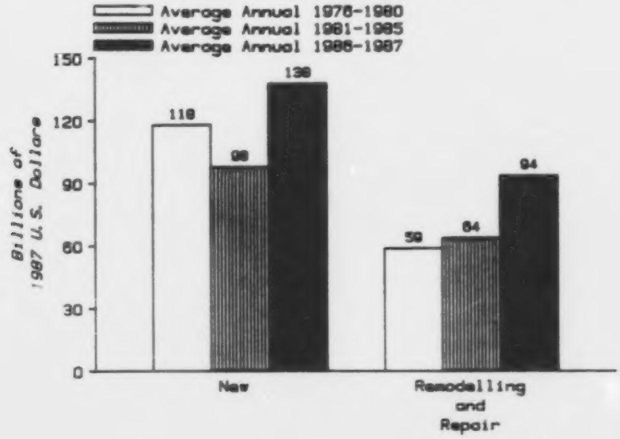
U.S. Non-Residential Building Declined in 1987 While Residential Building Increased

REAL BUILDING CONSTRUCTION EXPENDITURES
BY TYPE OF WORK
UNITED STATES. 1976-1987



Source: Clayton Research Associates based on data from U.S. Department of Commerce, Bureau of the Census.

REAL RESIDENTIAL CONSTRUCTION EXPENDITURES
ON NEW AND REMODELLING AND REPAIR WORK
UNITED STATES. 1976-1987



Source: Clayton Research Associates based on data from U.S. Department of Commerce, Bureau of the Census.

- Increased spending on residential construction has provided the main impetus to the higher real expenditures on building construction in the U.S.
- Spending on non-residential building construction increased in the period to 1985 but declined in the past two years.
- Residential construction expenditures in the U.S. in 1987 totalled $234 billion (U.S.), well above the annual averages of $177 billion (1987 dollars) for 1976-1980 and $162 billion in 1981-1985.
- In contrast, the change in non-residential building construction expenditures was much less marked.* Non-residential building expenditures in 1987 totalled $114 billion (U.S.); this compares to average annual 1987 dollar expenditures of $89 billion in 1976-1980 and $105 billion for the 1981-1985 period.
- Spending on remodelling and repairs in the U.S. is accounting for a much larger share of residential building. In 1986-1987, remodelling and repairs increased 47 percent over the 1981-1985 average annual level.

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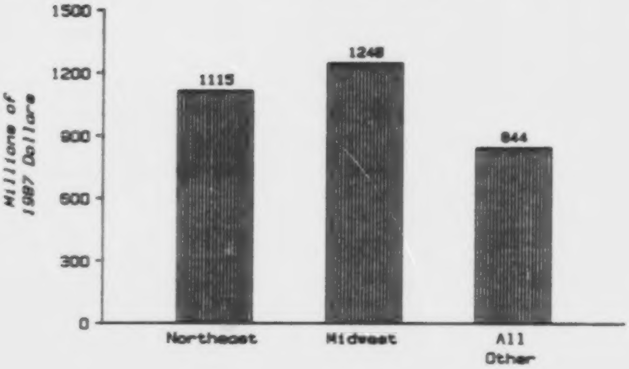
* U.S. data do not include estimates of expenditures on repairs to non-residential buildings.

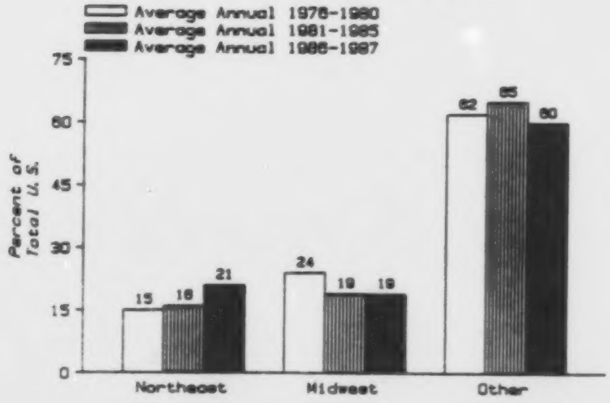
Most Ontario Building Product Exports to the U.S. Go to Midwest and Northeast Regions

DOMESTIC EXPORTS OF BUILDING PRODUCTS TO
U.S. BY REGION
ONTARIO, 1987



Source: Clayton Research Associates based on Statistics Canada data.

REAL BUILDING CONSTRUCTION
EXPENDITURES BY REGION
UNITED STATES, 1976-1987



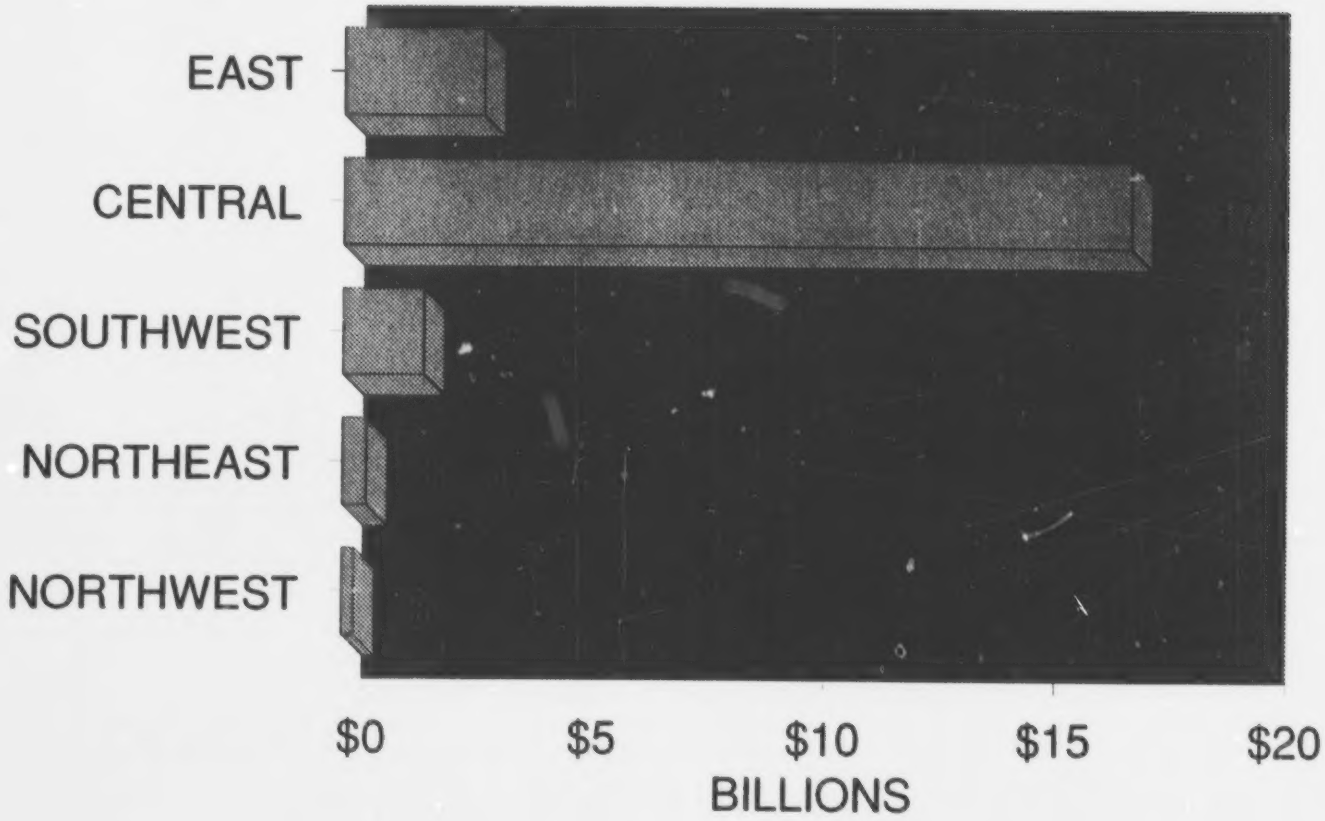
Source: Clayton Research Associates based on data from U.S. Department of Commerce, Bureau of the Census.

- The main U.S. markets for Ontario building product exports are the states comprising the Northeast and Midwest regions.
- These two regions combined accounted for almost three-quarters of the estimated 1987 building product exports to the U.S. from Ontario.
- The Midwest region, particularly the states of Michigan, Ohio, Illinois, Indiana and Wisconsin, was the largest market for Ontario building product exports to the U.S.
- The Northeast and Midwest regions combined accounted for an estimated 40 percent of all building construction spending in the U.S. in 1986-1987.
- On an average annual basis, the share of U.S. real building construction spending occurring in the Northeast region increased significantly in 1986-1987 but remained stable in the Midwest region over the same period.

APPENDIX B

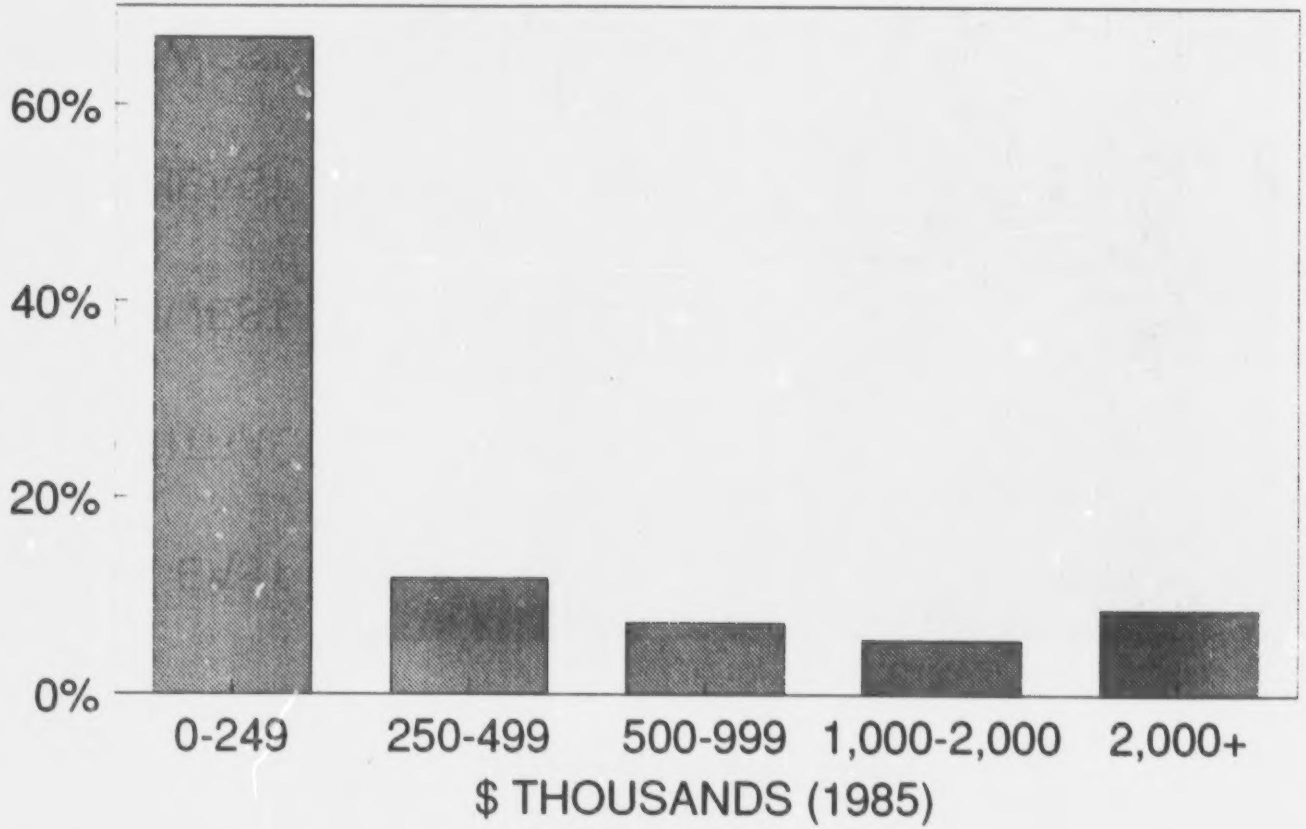
BIS/COCA CONSTRUCTION INFORMATION BASE SAMPLES

$ 23 BILLION WAS SPENT ON BUILDING IN ONTARIO IN 1987

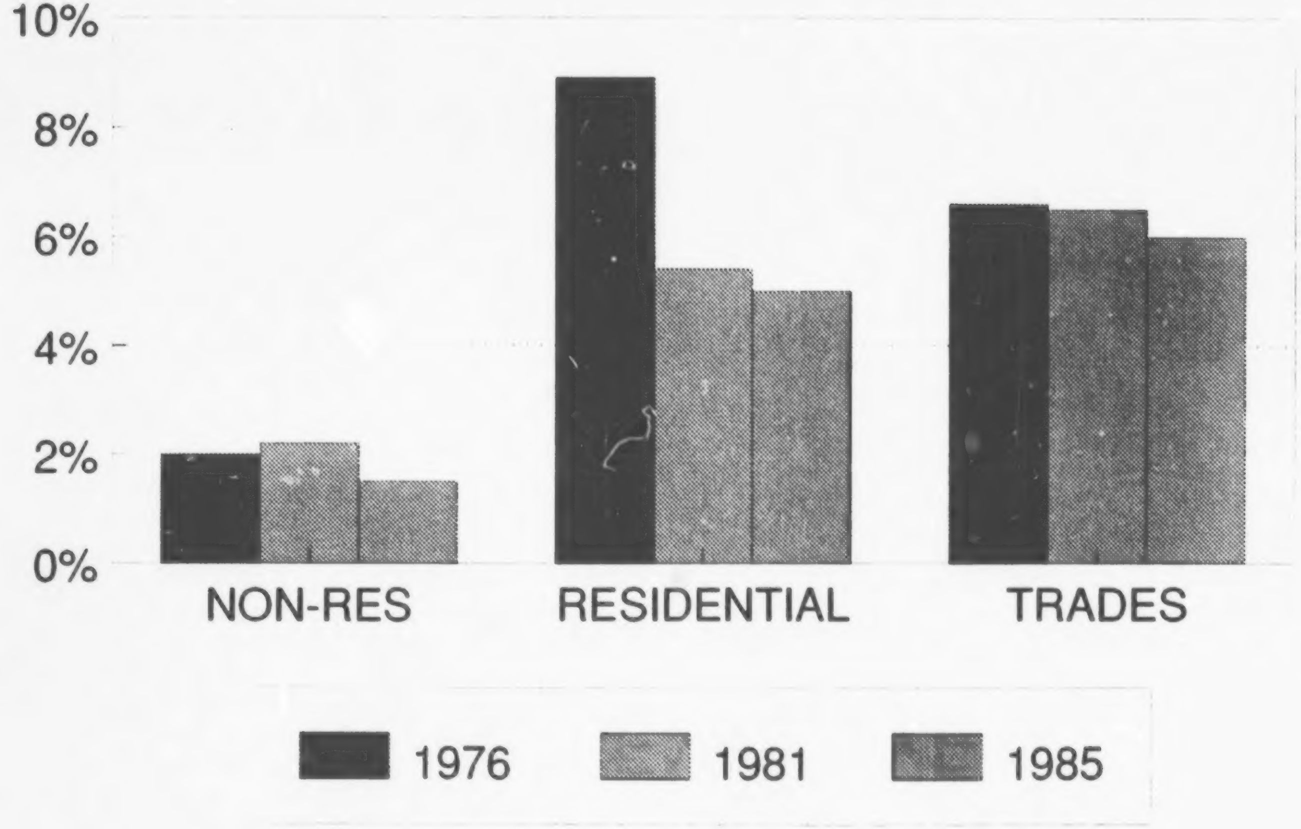


MANY SMALL PLAYERS

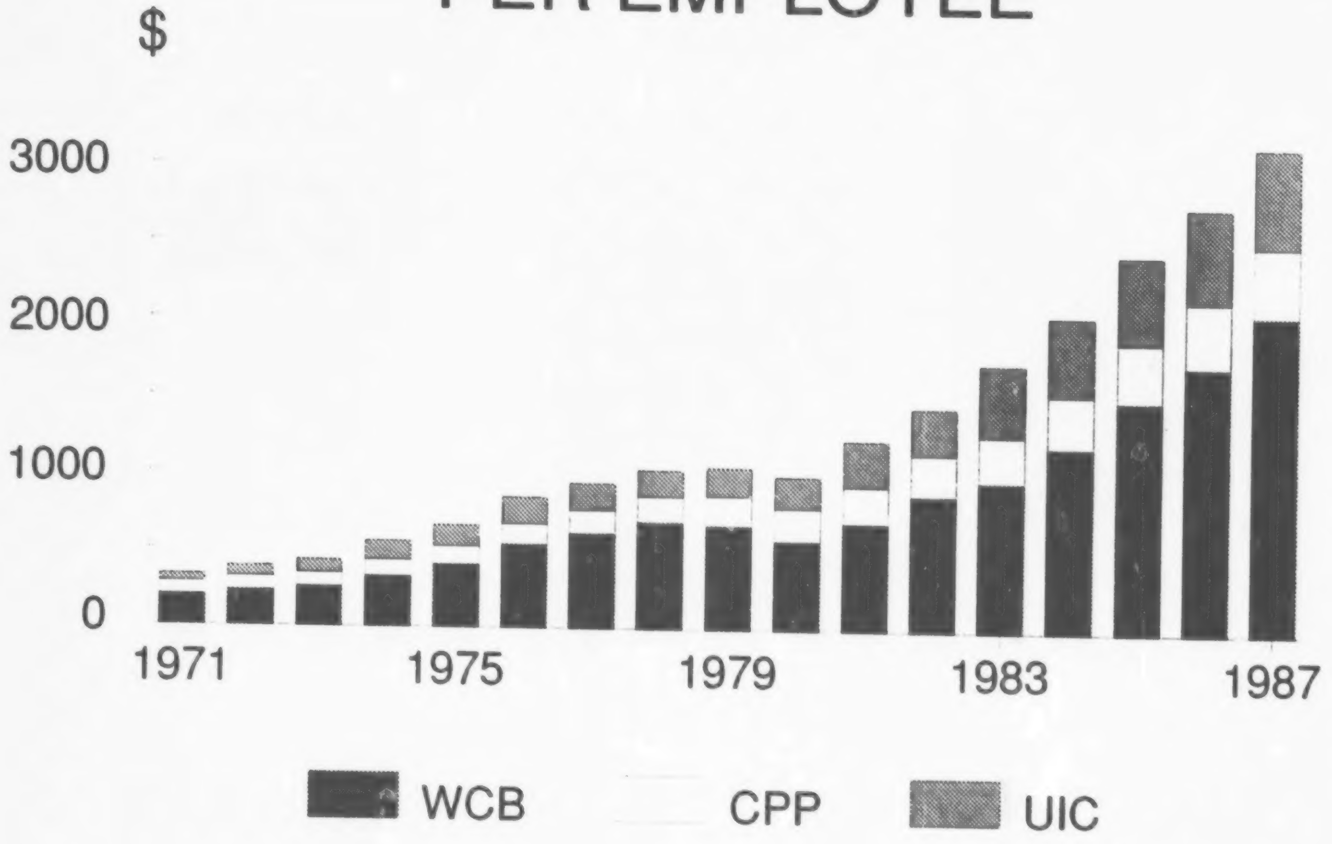
CONTRACTORS: DISTRIBUTION BY REVENUE



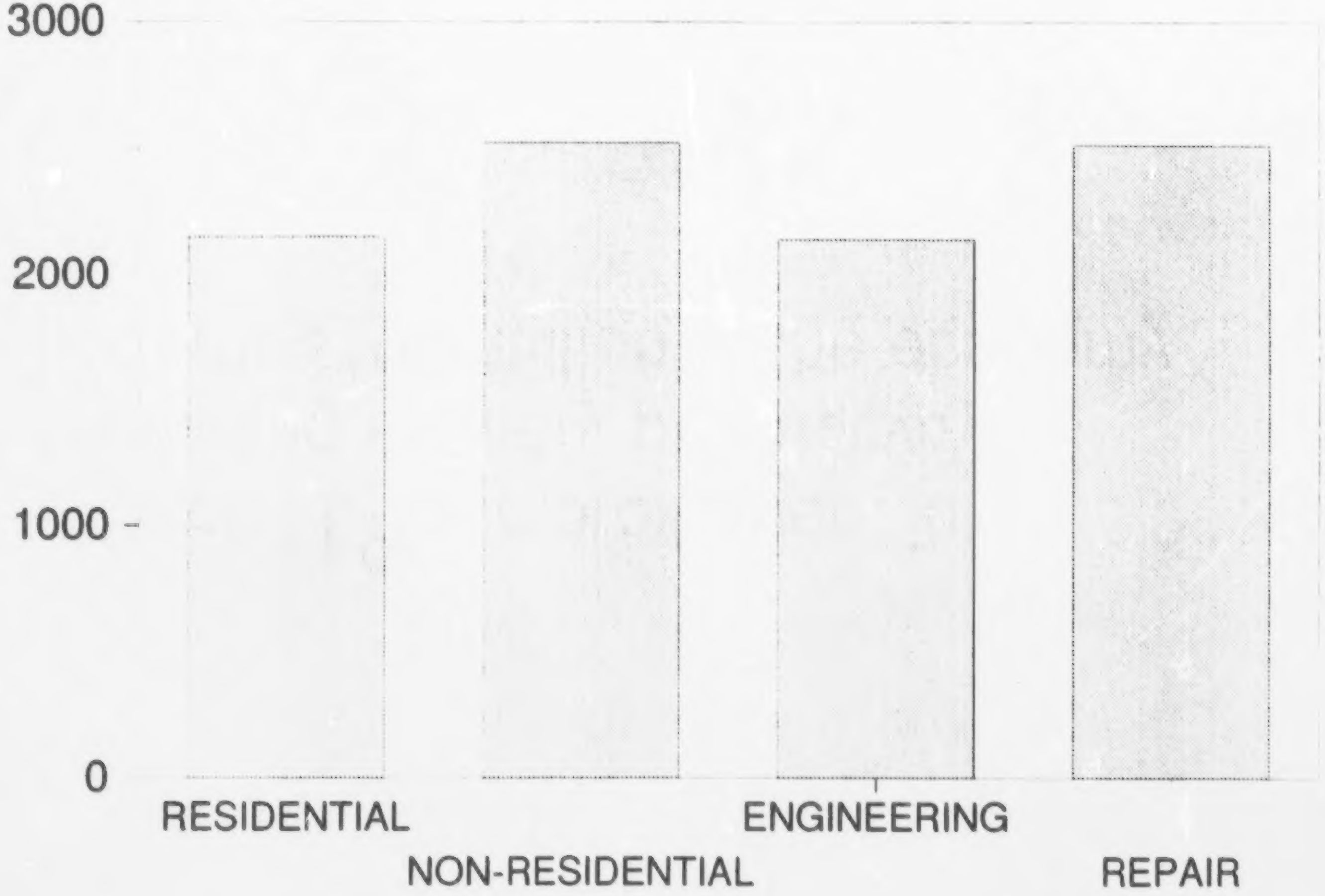
BUILDER/CONTRACTOR PROFIT MARGINS HAVE BEEN DECLINING



WCB, CPP & UIC COSTS PER EMPLOYEE

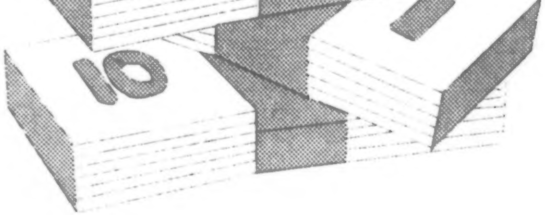


$400 MILLION SPENT ON CONSTRUCTION, EQUALLY DISTRIBUTED, CREATES OVER 9,300 JOBS.

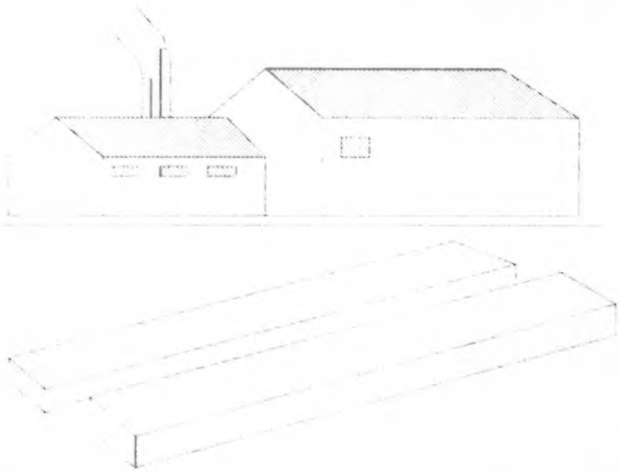


OPPORTUNITIES FOR AN INTEGRATED APPROACH

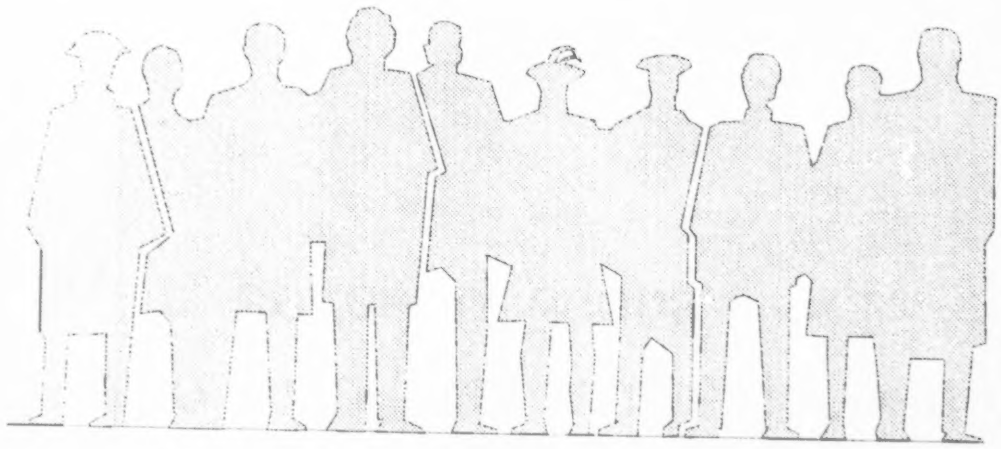
Each 1% improvement in building industry productivity is worth $100 million to the economy



A **1%** increase in the export
of Ontario building products generates
up to 1,000 jobs.

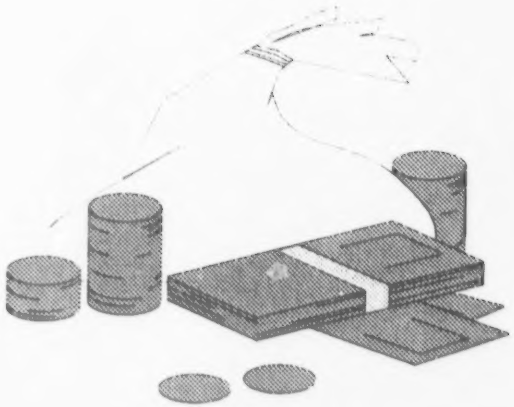


A 1% decrease in imports would add an additional 800 jobs



Regulatory Reform can reduce the final cost of construction by as much as

20%



APPENDIX C

THINK TANK '88

COPIES OF THE COMPLETE REPORT ARE AVAILABLE THROUGH THE ONTARIO MINISTRY OF HOUSING

THINK TANK '88

"Think Tank '88" was a follow-up activity to "Future Building '88". Its purpose was to further define a plan whereby the Ontario building industry could interest young people in a building industry career while at the same time solving the industry's need for more skilled workers.

"Think Tank '88" received input from 56 participants representing labour, management, construction related associations and federal and provincial governments. All participants had training interests or backgrounds.

CONSULTANTS RECOMMENDATIONS: (based on discussions at Think Tank '88 and pre-interviews with the majority of the participants)

Plan For Future Action

A. Marketing

1. Industry/government hosted conference for school guidance counsellors and teachers to better inform them of the careers available for students in the building industry, apprenticeship application procedures and training methods and programs.

2. Government should initiate a Construction Careers Week and encourage local industry associations to make something happen locally.

3. A multi-media marketing campaign should be mounted to reach beyond schools, to emphasize success stories, the image of the industry and the importance of training to instill in the worker a sense of pride and the importance of safety. This

might involve television, radio, newspapers and magazines, outdoor advertising, and perhaps a school touring program.

4. Information should be supplied to local trades and employees about strategies to attract target group applicants prior to the imposition of legislation.

5. Computers should be better utilized as a means to excite young people about careers in building. Some appropriate software should be developed for use in schools which would stimulate interest and provide information.

6. Sponsors of "Think Tank '88" should relay industry concerns expressed regarding safety regulations and enforcement, and the possible inclusion of target pledges in collective agreements, to the appropriate Ontario government ministry or agency.

B. Information Needs

1. Government should commission a review of existing data.

2. Conduct a thorough sector specific pilot study.

3. Review the software and data collection systems currently being utilized.

4. Commission a study on the economic and social impact on the Province of labour shortages in the construction industry (ie: social assistance, delays in housing projects, regional unemployment).

C. Training Issues

1. A province wide task force to convey to the Provincial Advisory Committees the needs of the construction industry (perhaps to include the Community Industrial Training Committees)

2. A province wide task force to focus on the training needs of the Ontario building industry. This group would identify long-term requirements and the best mix of delivery vehicles; determine appropriate funding mechanisms; implement a plan of action to address each circumstance.

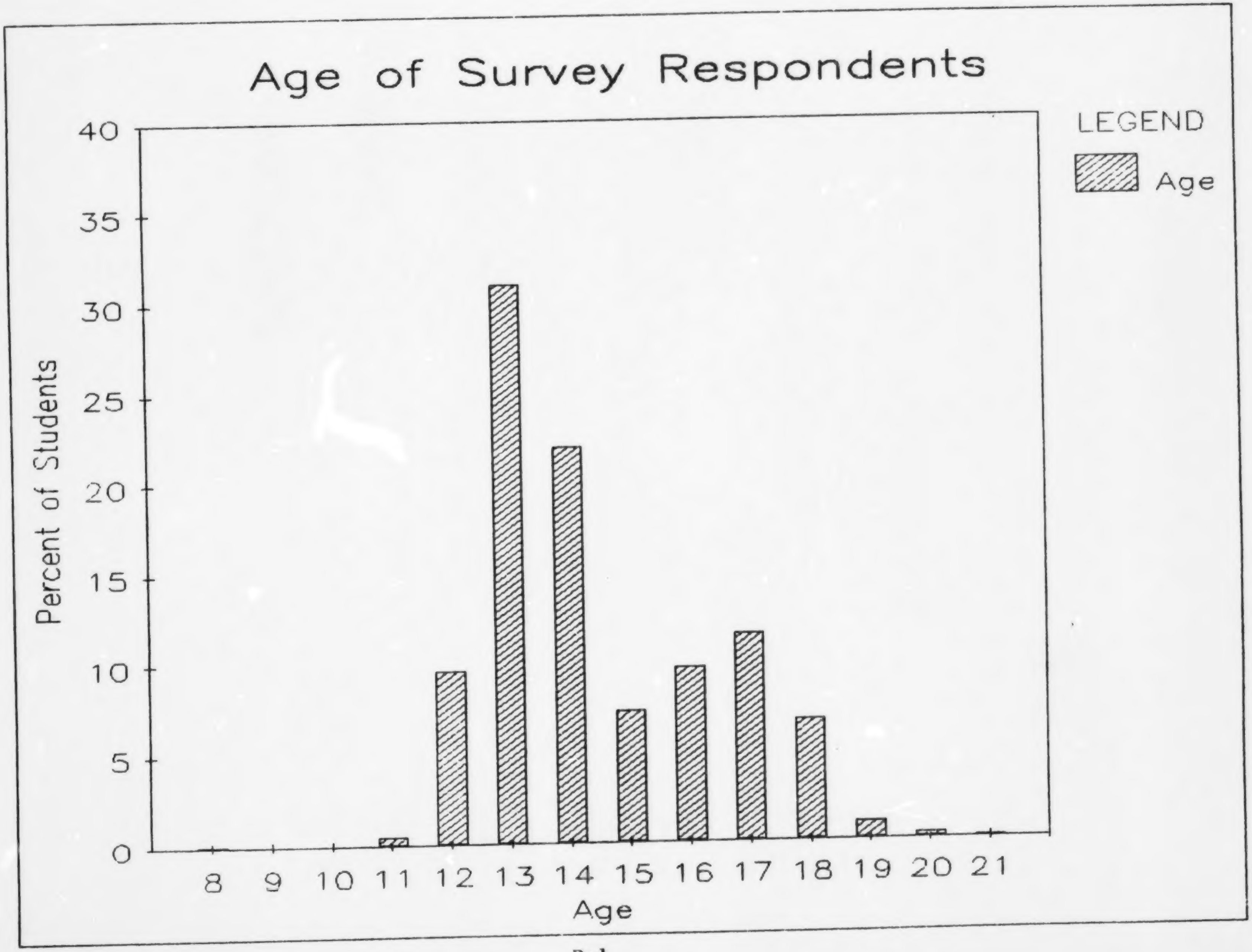
3. A series of consultations with the non-union sector players to: look at training methods, ways to cost-share and encourage investment in training, share information and establish networks to improve quality, and identify shared problems needing collective actions.

COPIES OF THE COMPLETE REPORT ARE AVAILABLE THROUGH THE ONTARIO MINISTRY OF HOUSING

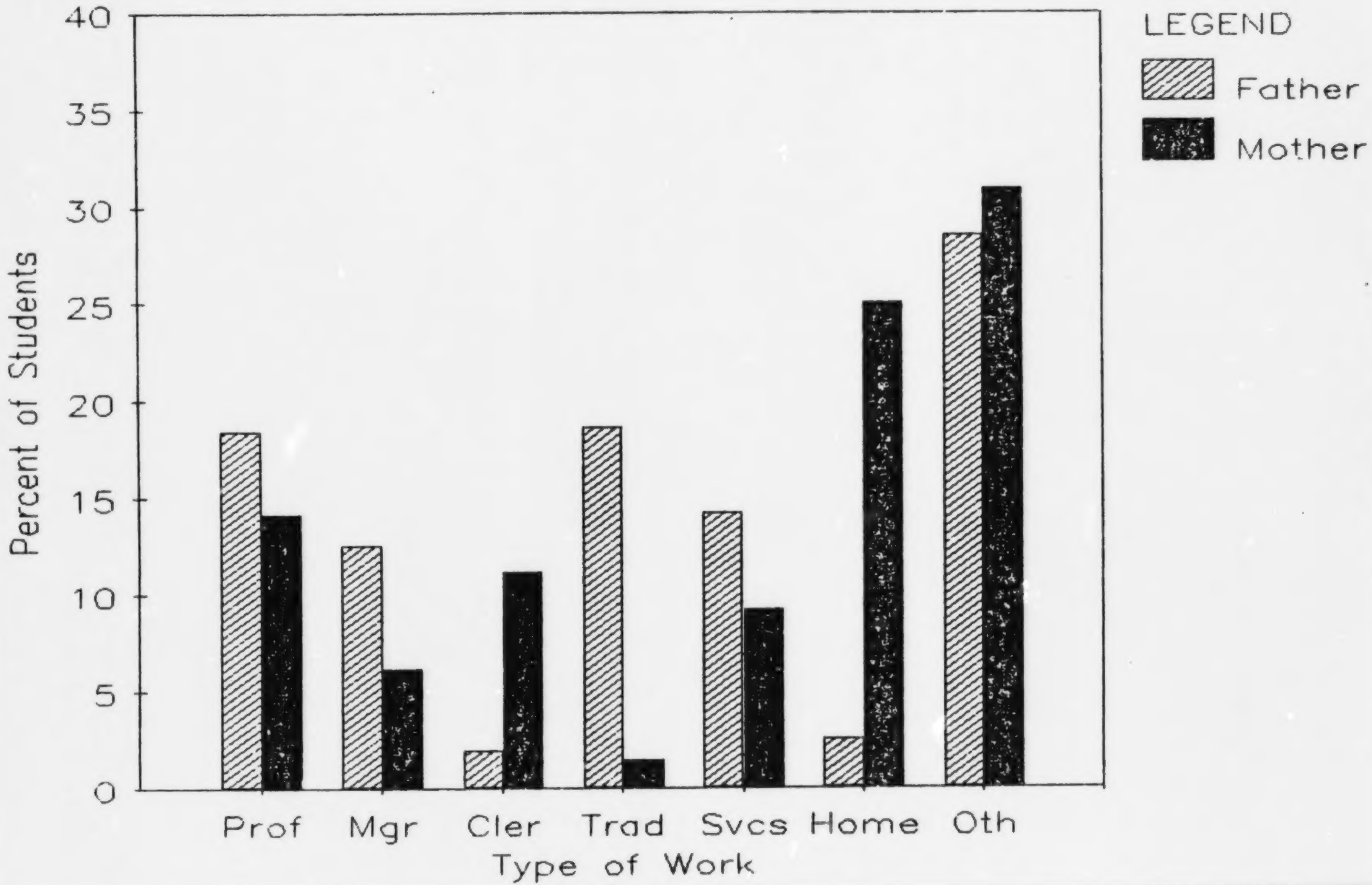
APPENDIX D

PERCEPTIONS & ATTITUDES OF ONTARIO YOUTH TOWARDS THE BUILDING CONSTRUCTION INDUSTRY

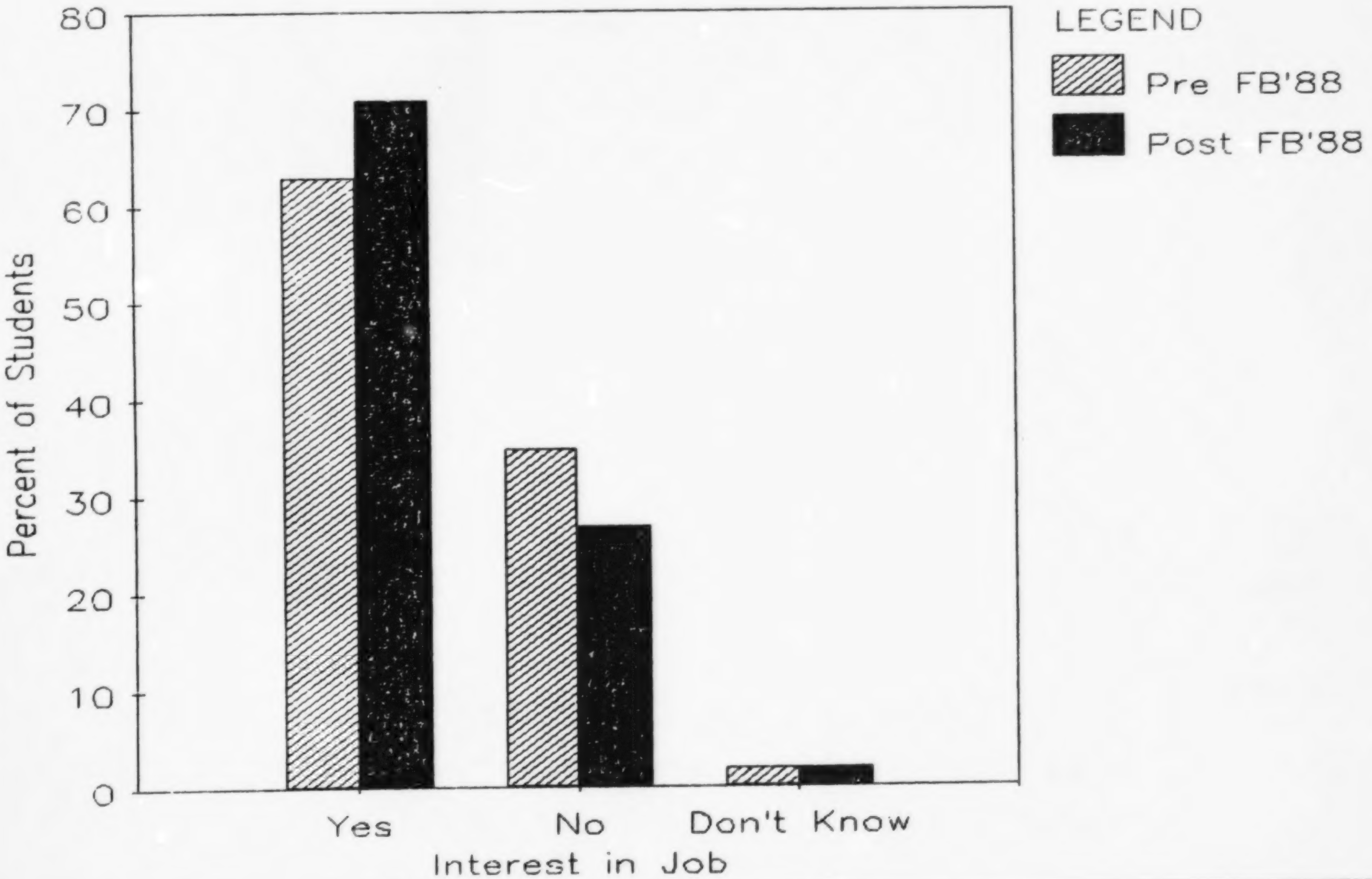
COPIES OF THE COMPLETE STUDY ARE AVAILABLE THROUGH THE ONTARIO MINISTRY OF HOUSING


Age of Survey Respondents
LEGEND
▨ Age
Percent of Students
40
35
30
25
20
15
10
5
0
8
9
10
11
12
13
14
15
16
17
18
19
20
21
Age

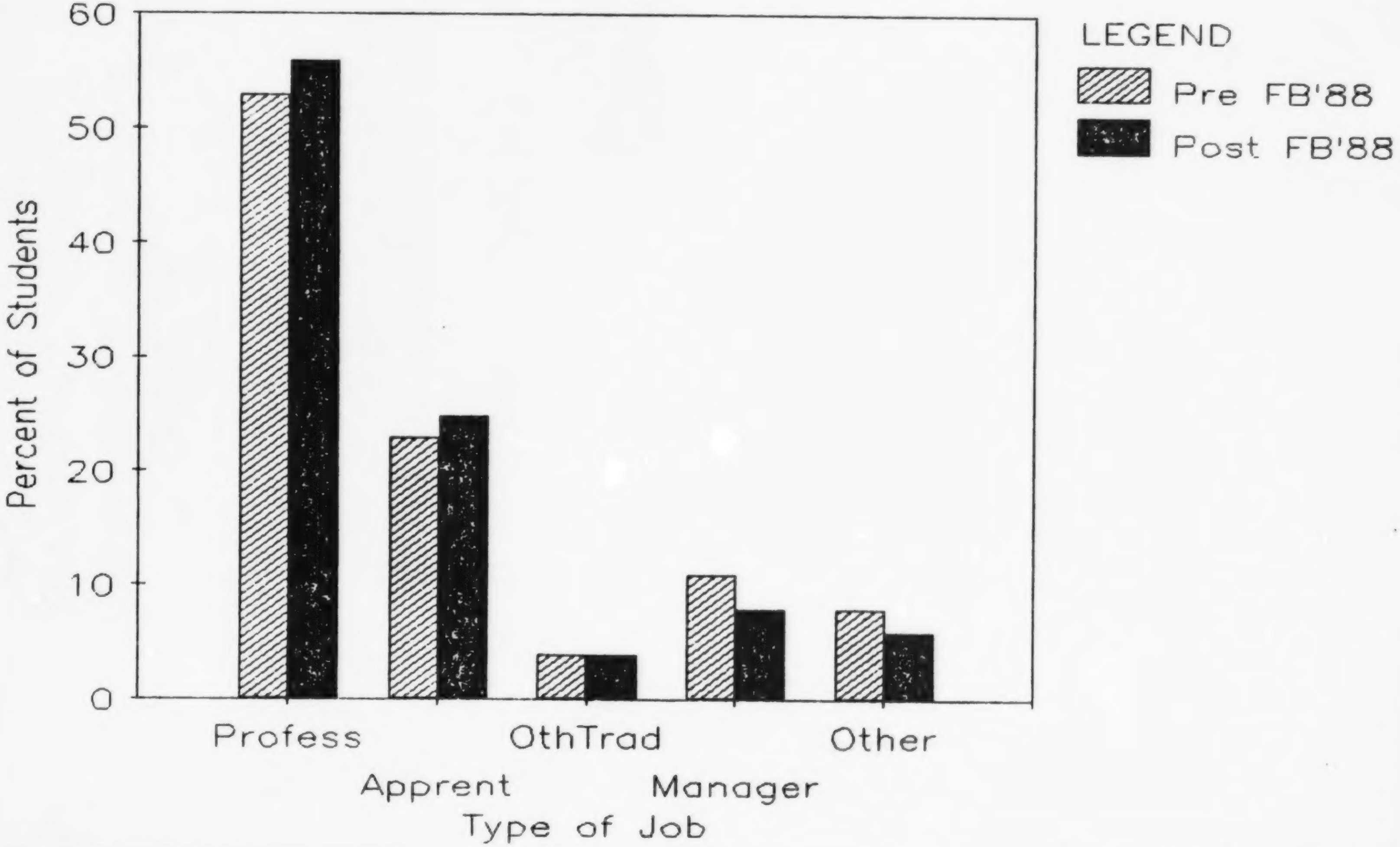
Parents' Type of Occupation
For FB'88 Attendees

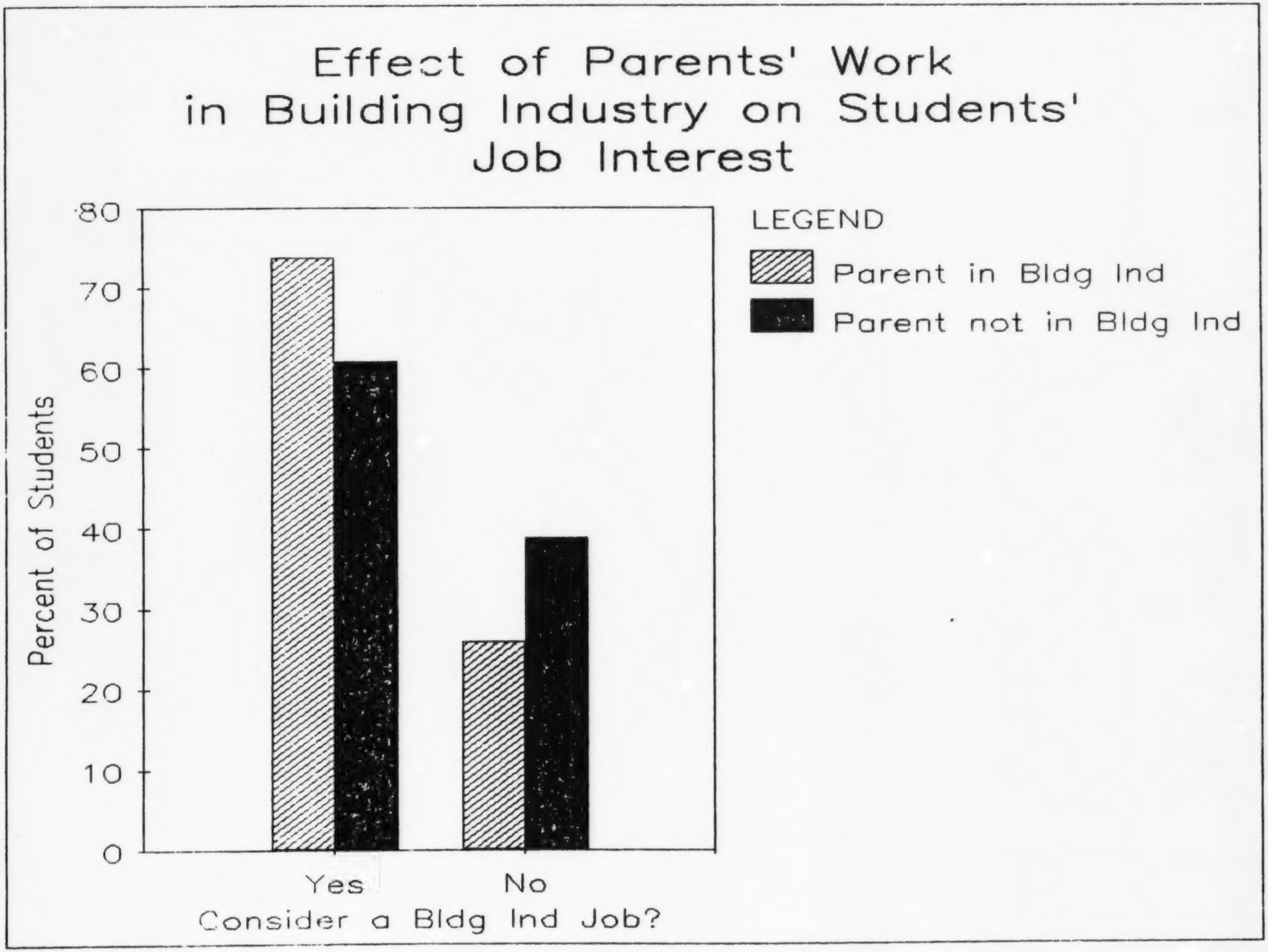


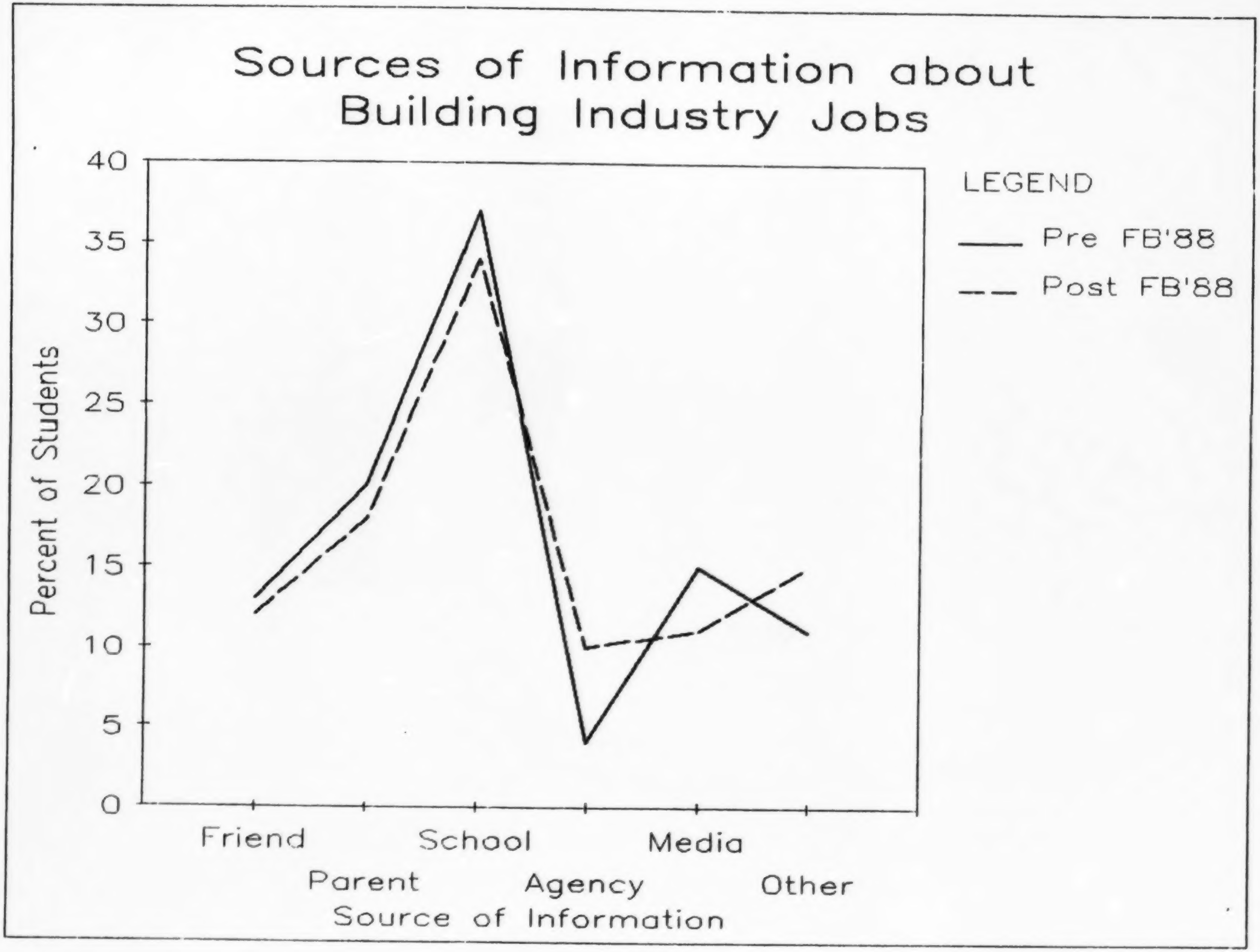
Would You Consider a Job in the Building Industry?

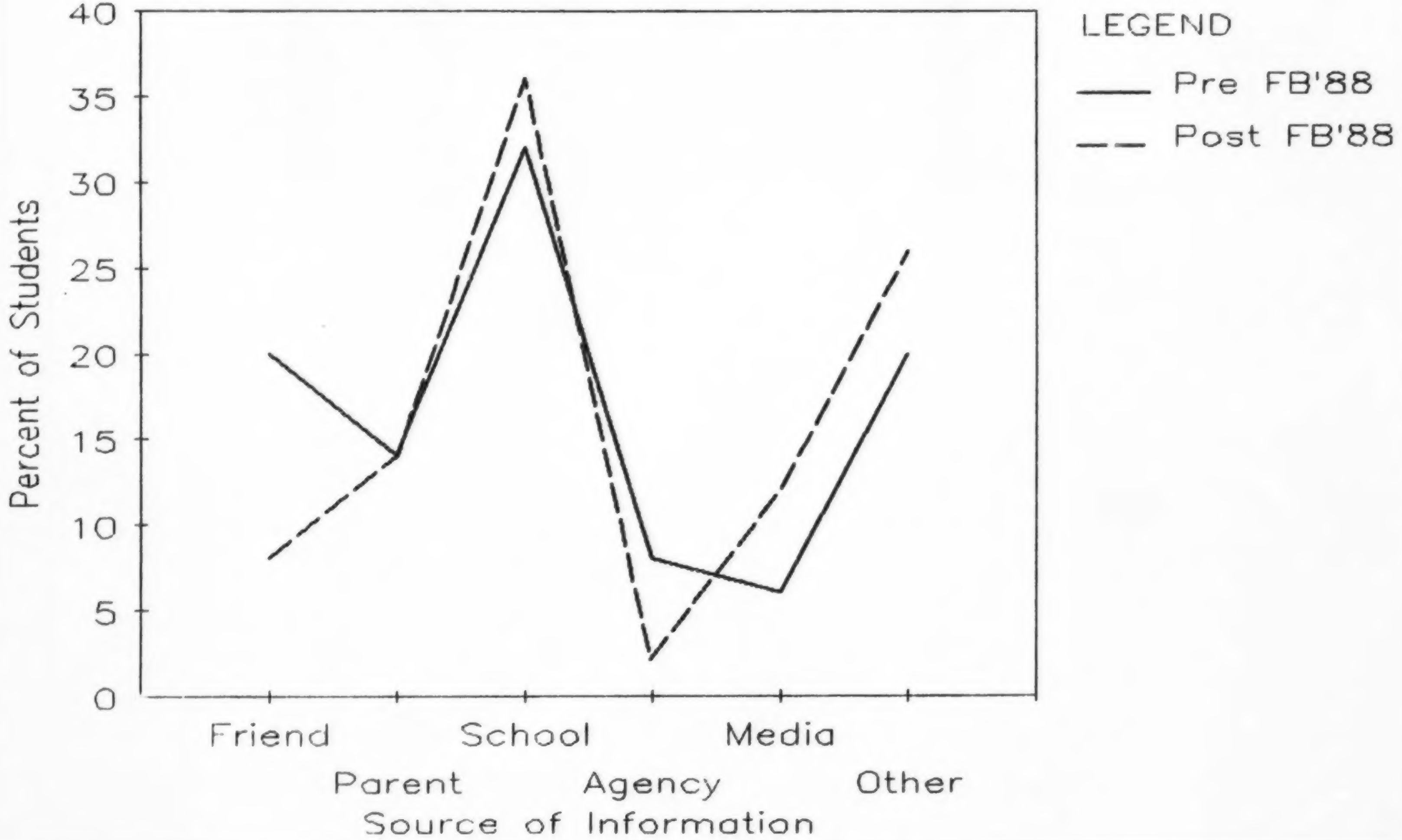


Job Interests for Those Who Would Consider a Job in the Building Industry



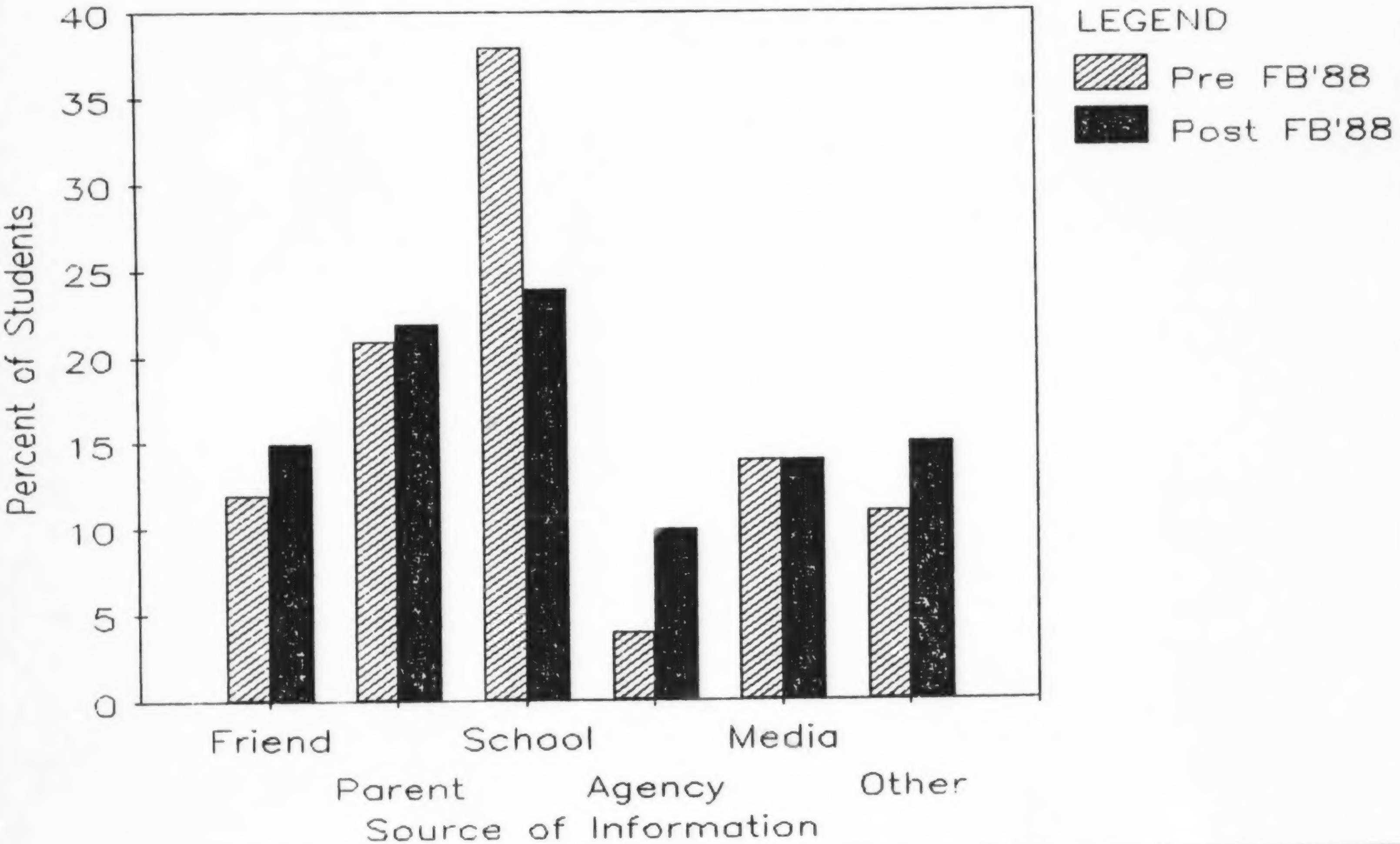

Effect of Parents' Work in Building Industry on Students' Job Interest
80
70
60
50
40
30
20
10
0
Percent of Students
Yes
No
Consider a Bldg Ind Job?
LEGEND
▨ Parent in Bldg Ind
■ Parent not in Bldg Ind

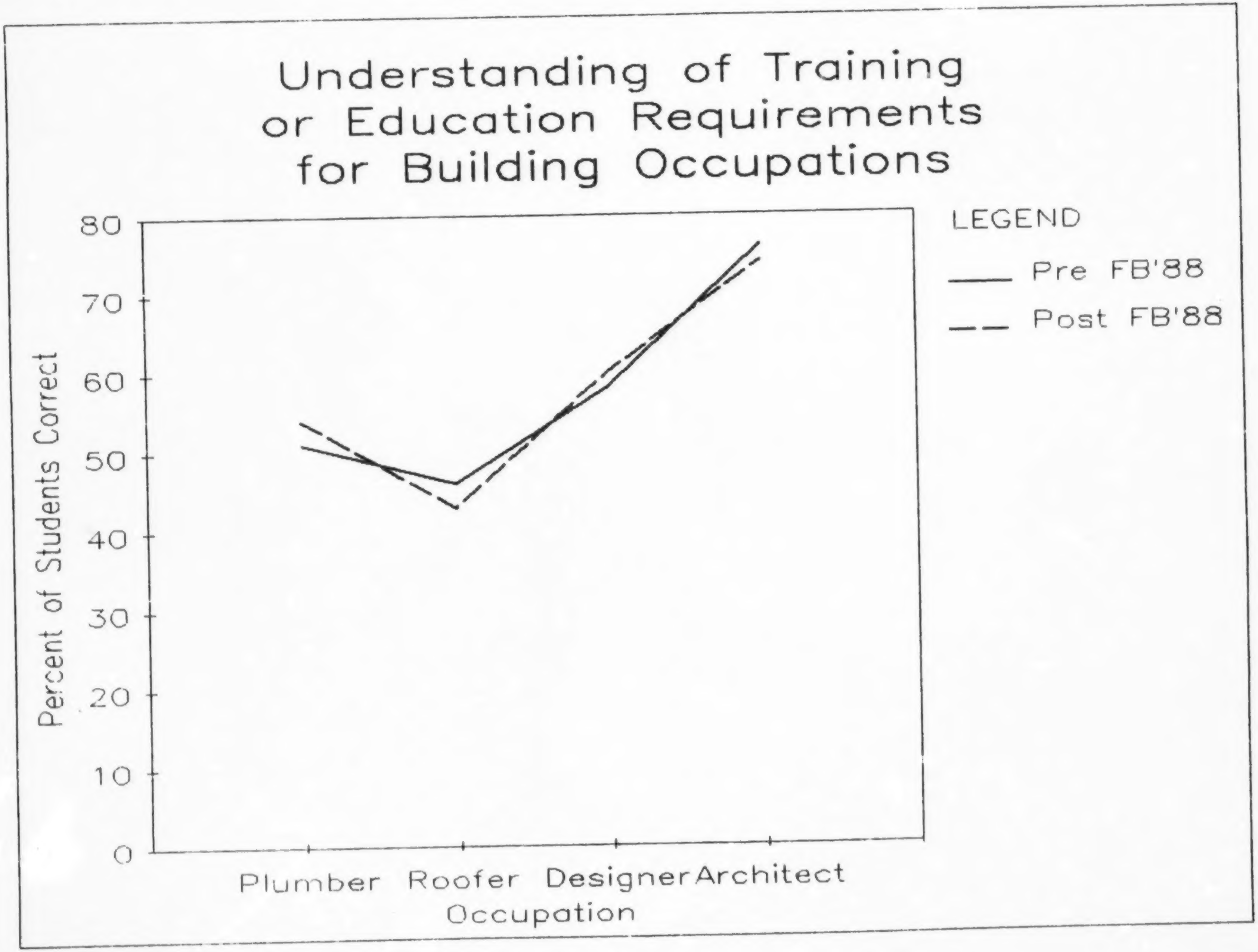

Sources of Information about Building Industry Jobs
LEGEND
Pre FB'88
Post FB'88
Percent of Students
40
35
30
25
20
15
10
5
0
Friend
Parent
School
Agency
Media
Other
Source of Information



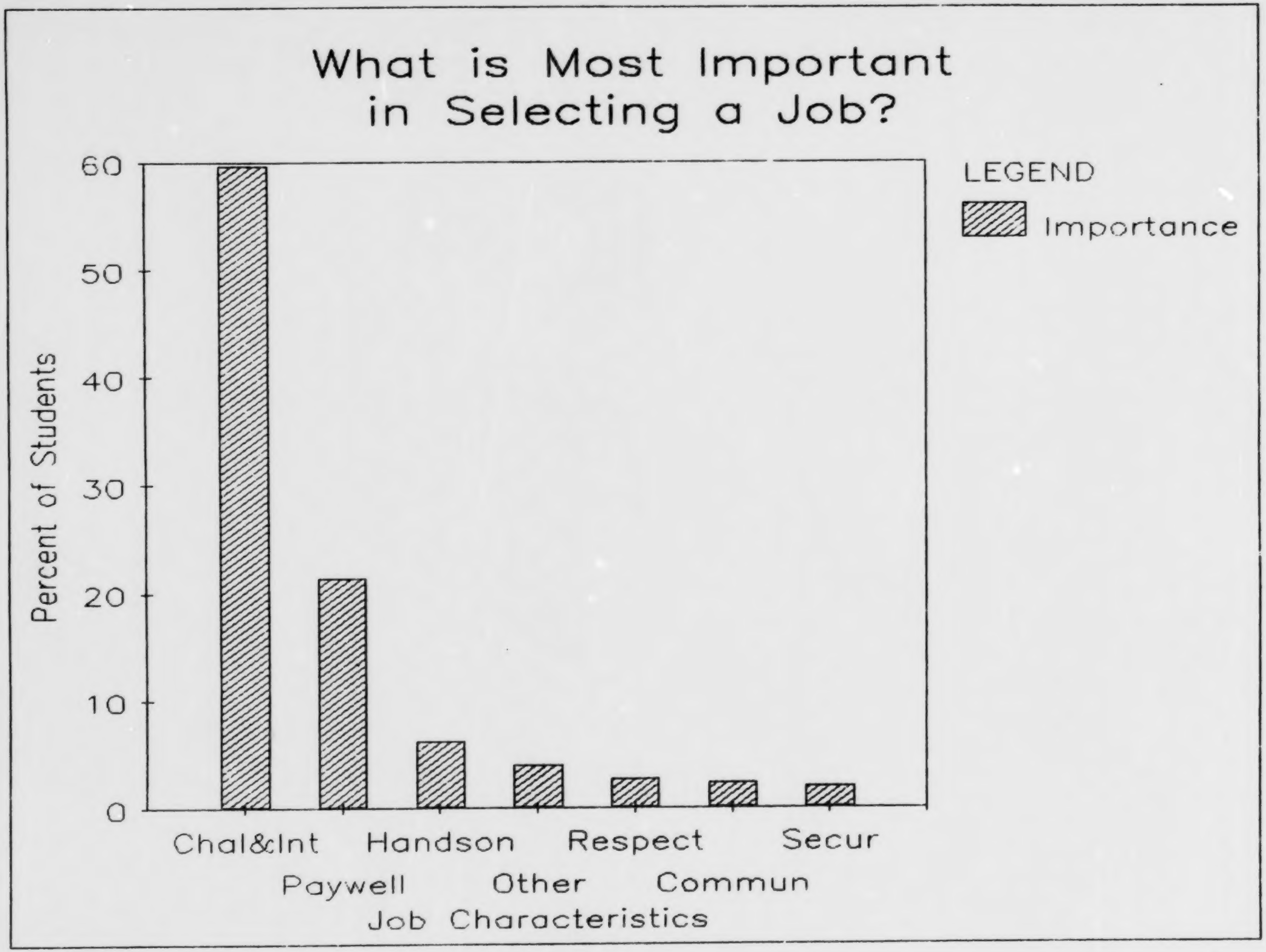
Sources of Information for Students NOT Interested in a Building Industry Job

Main Source of Information for Students with Continuing Interest in Building Industry

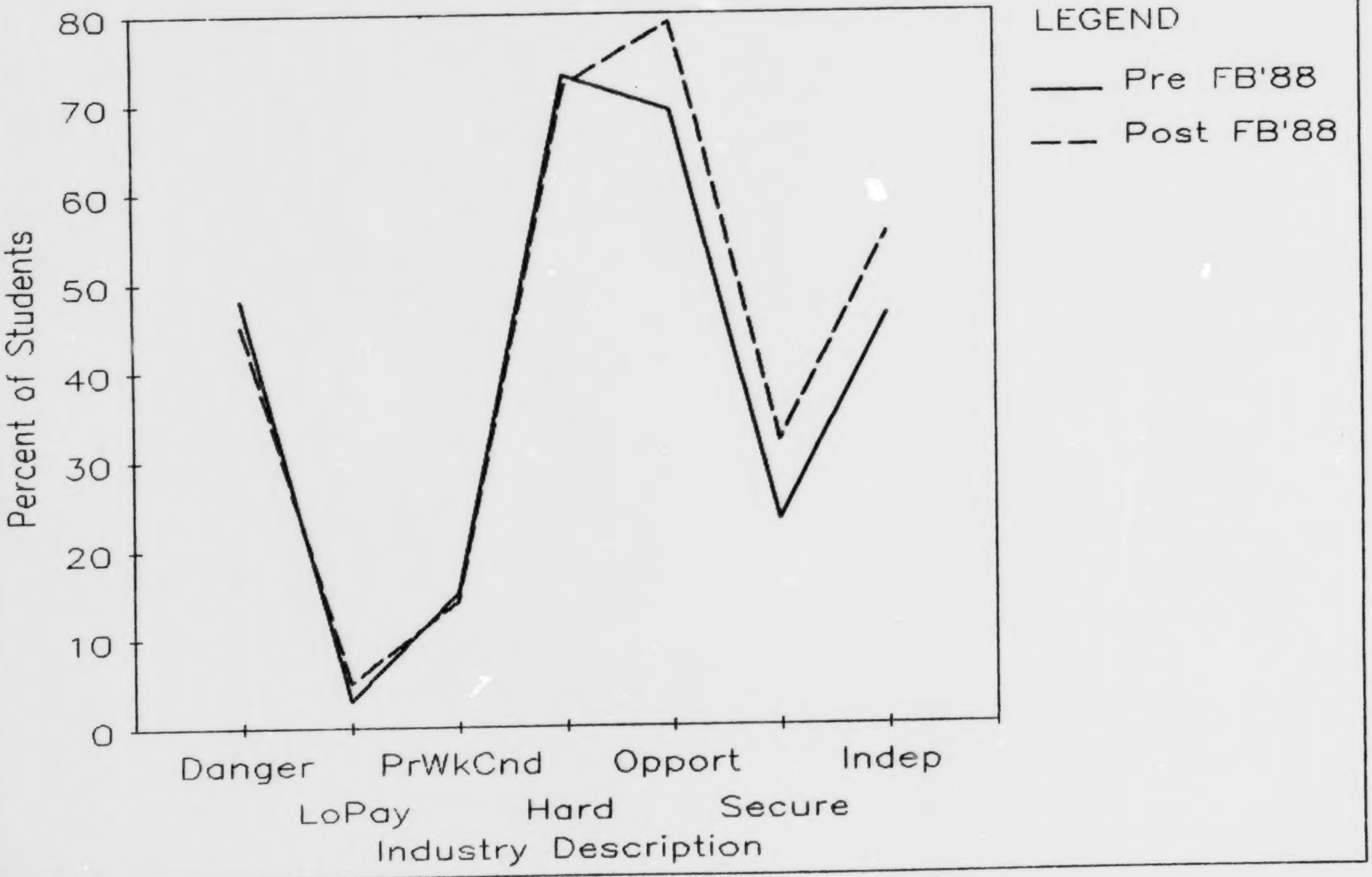




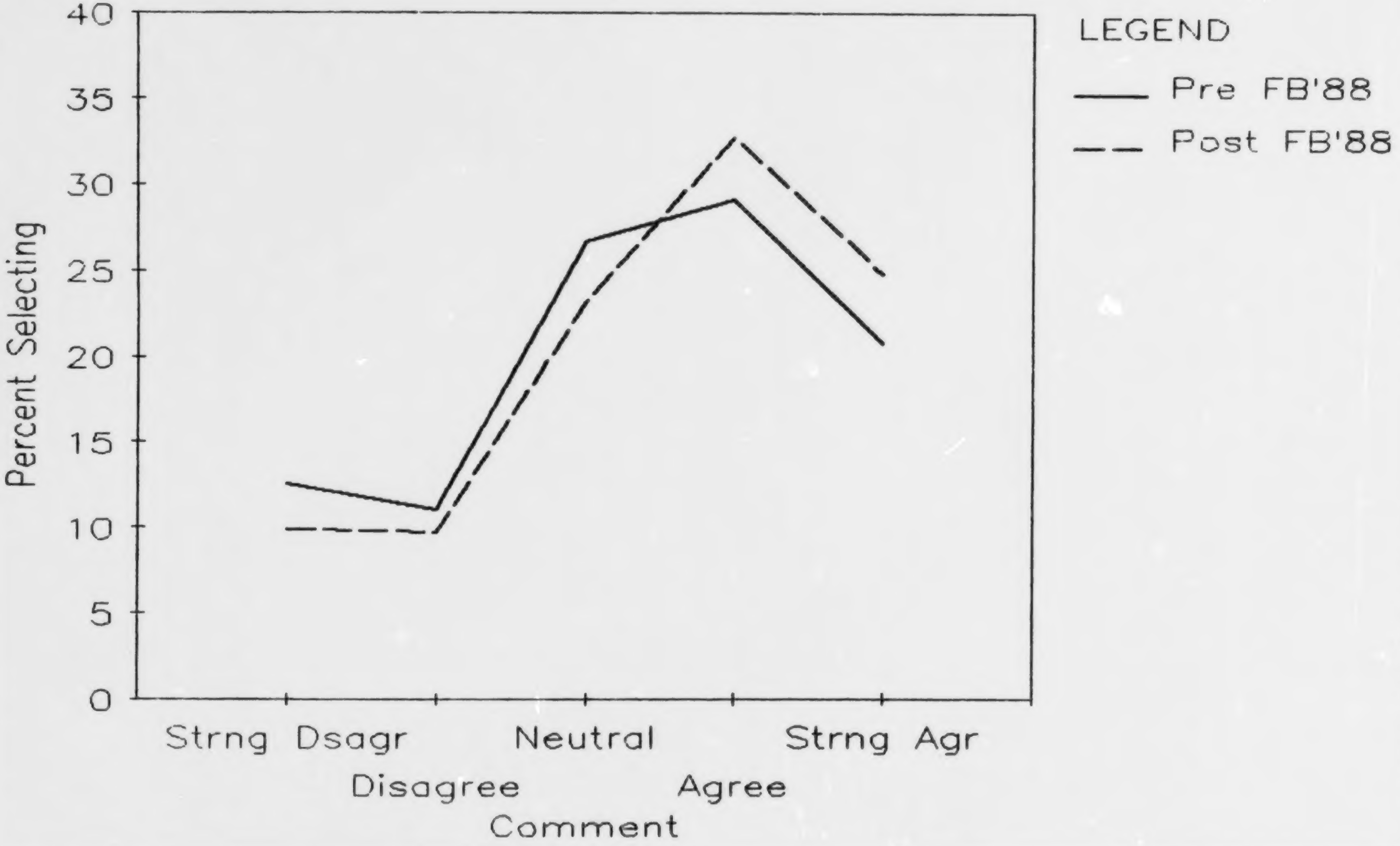
Understanding of Training or Education Requirements for Building Occupations

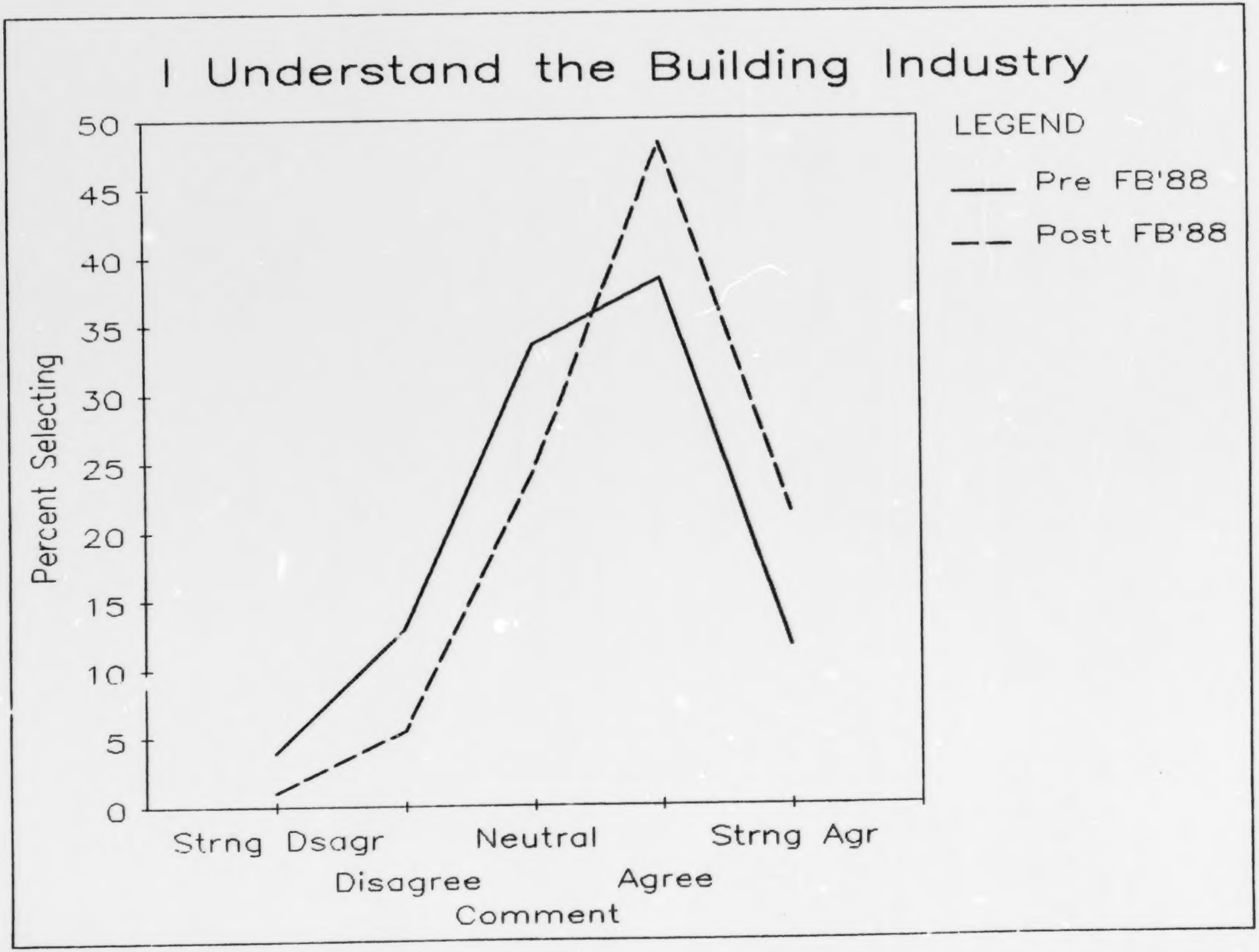

What is Most Important
in Selecting a Job?
Percent of Students
60
50
40
30
20
10
0
Chal&Int
Paywell
Handson
Other
Respect
Commun
Secur
Job Characteristics
LEGEND
▨ Importance

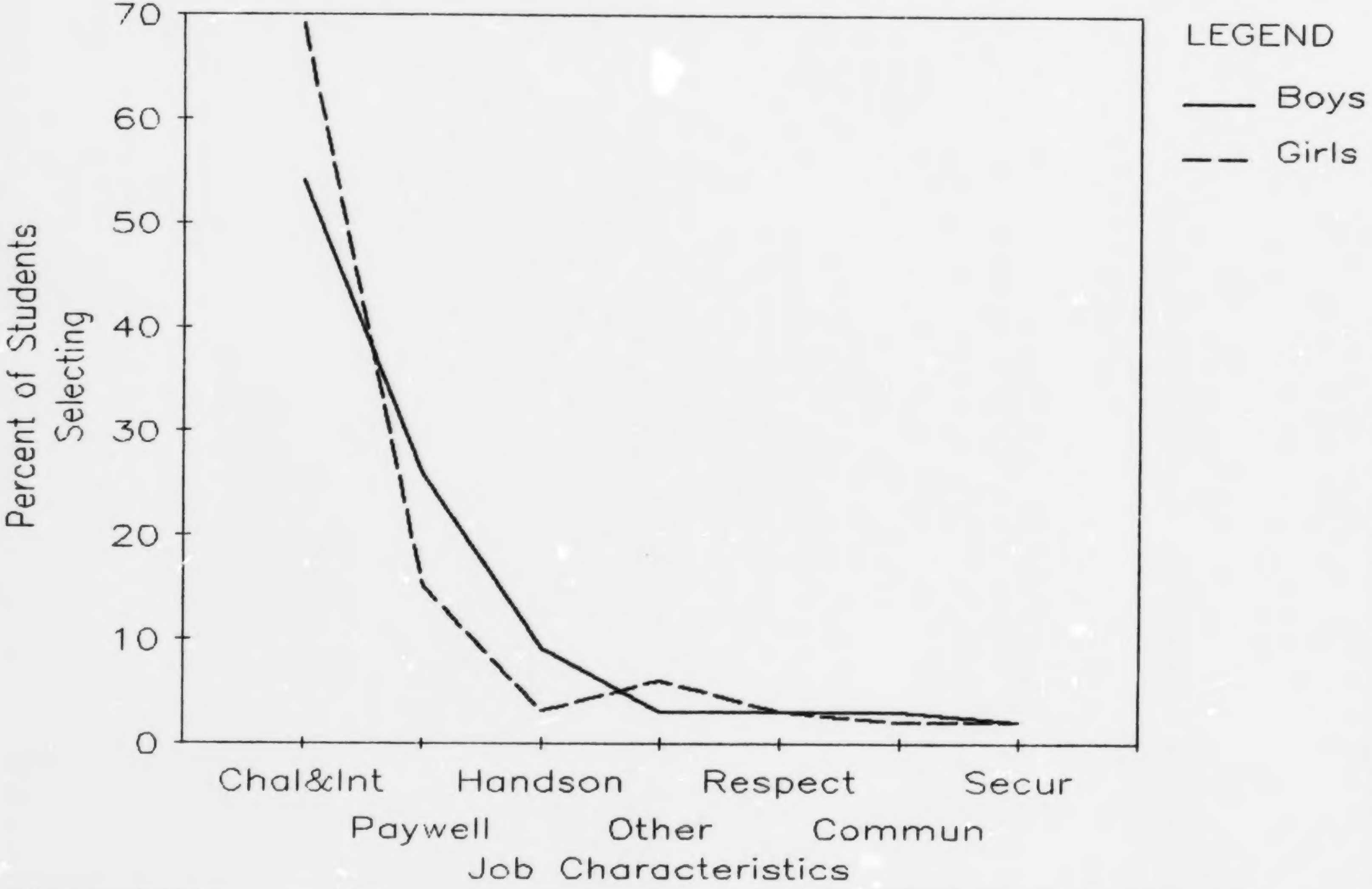
What Best Describes Jobs in the Building Industry?



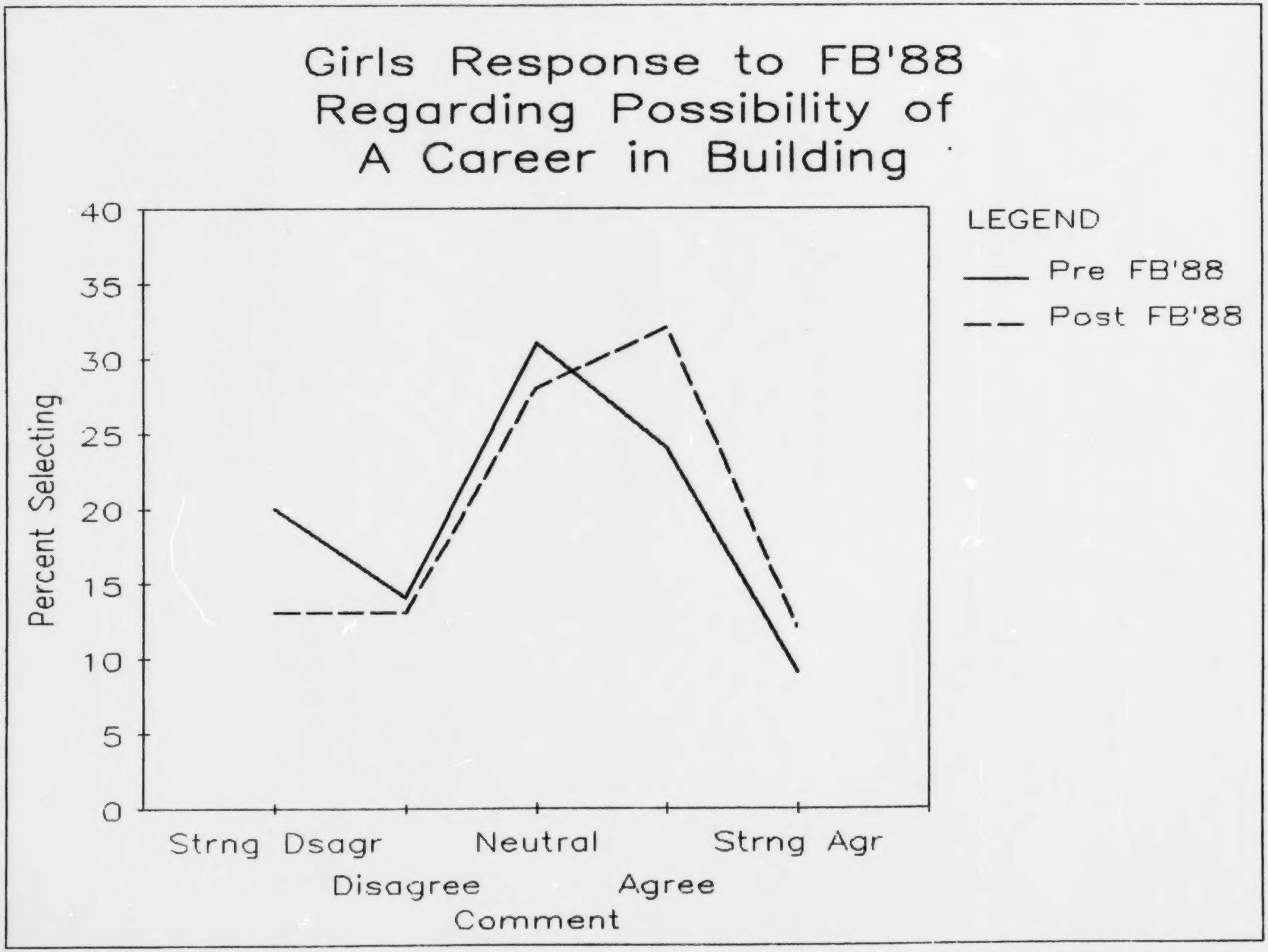
The Building Industry
Could Provide the Type of Career
in Which I Might Be Interested




I Understand the Building Industry
LEGEND
Pre FB'88
Post FB'88
Percent Selecting
50
45
40
35
30
25
20
15
10
5
0
Strng Dsagr
Disagree
Neutral
Agree
Strng Agr
Comment

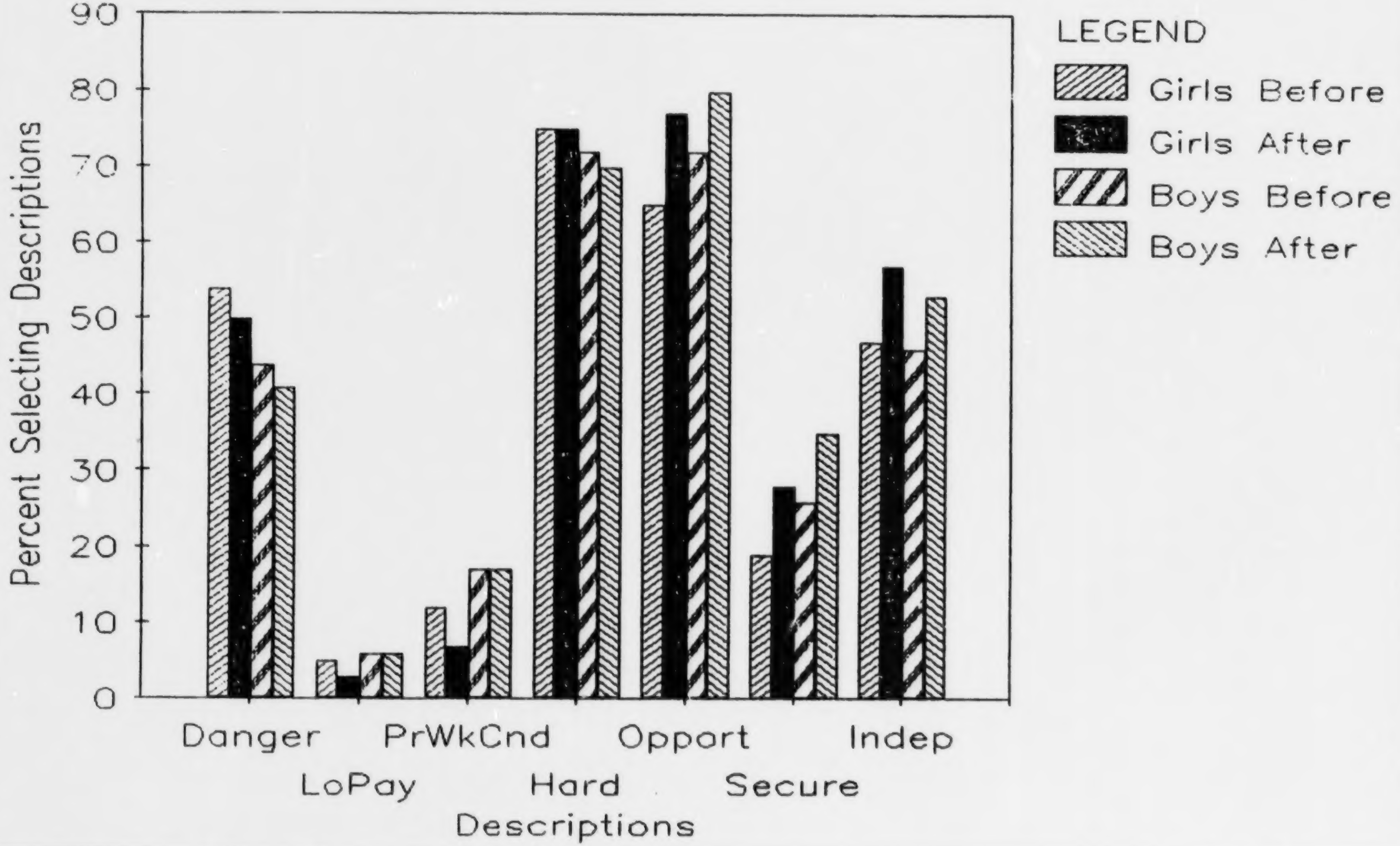


Importance of Job Characteristics: Differences Between Boys and Girls

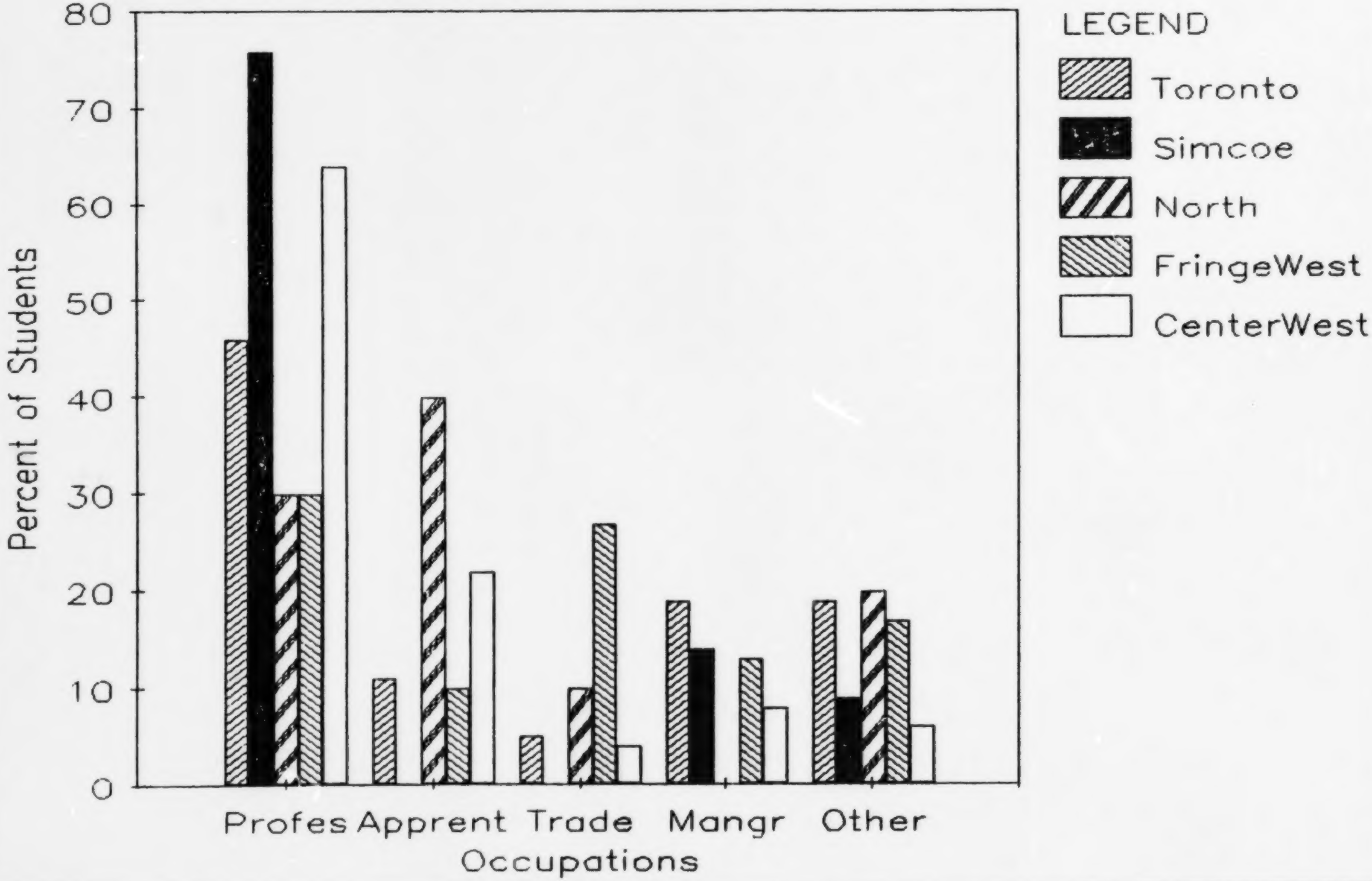


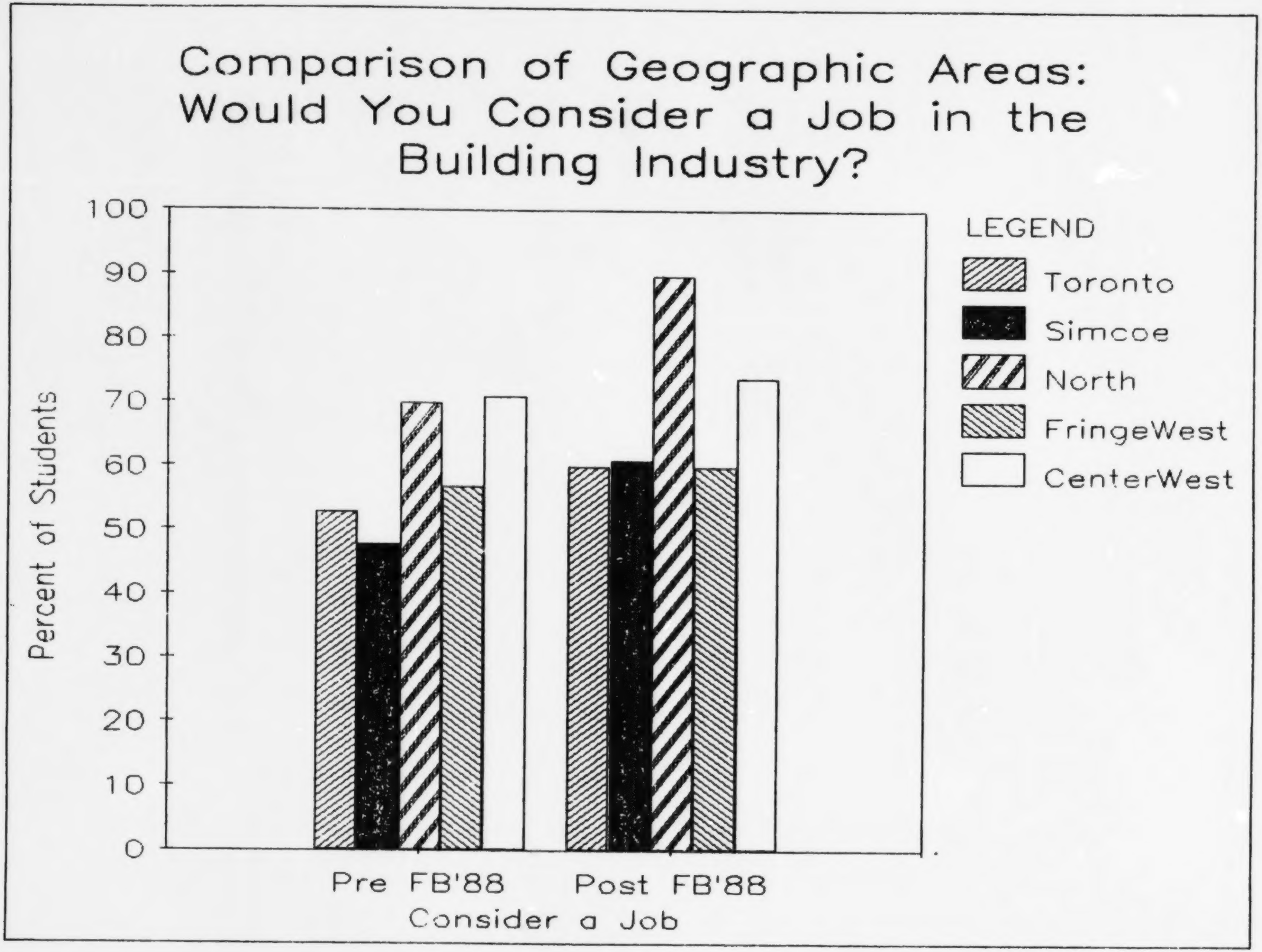
Girls Response to FB'88 Regarding Possibility of A Career in Building

Boys and Girls Descriptions of the Building Industry Before and After FB'88

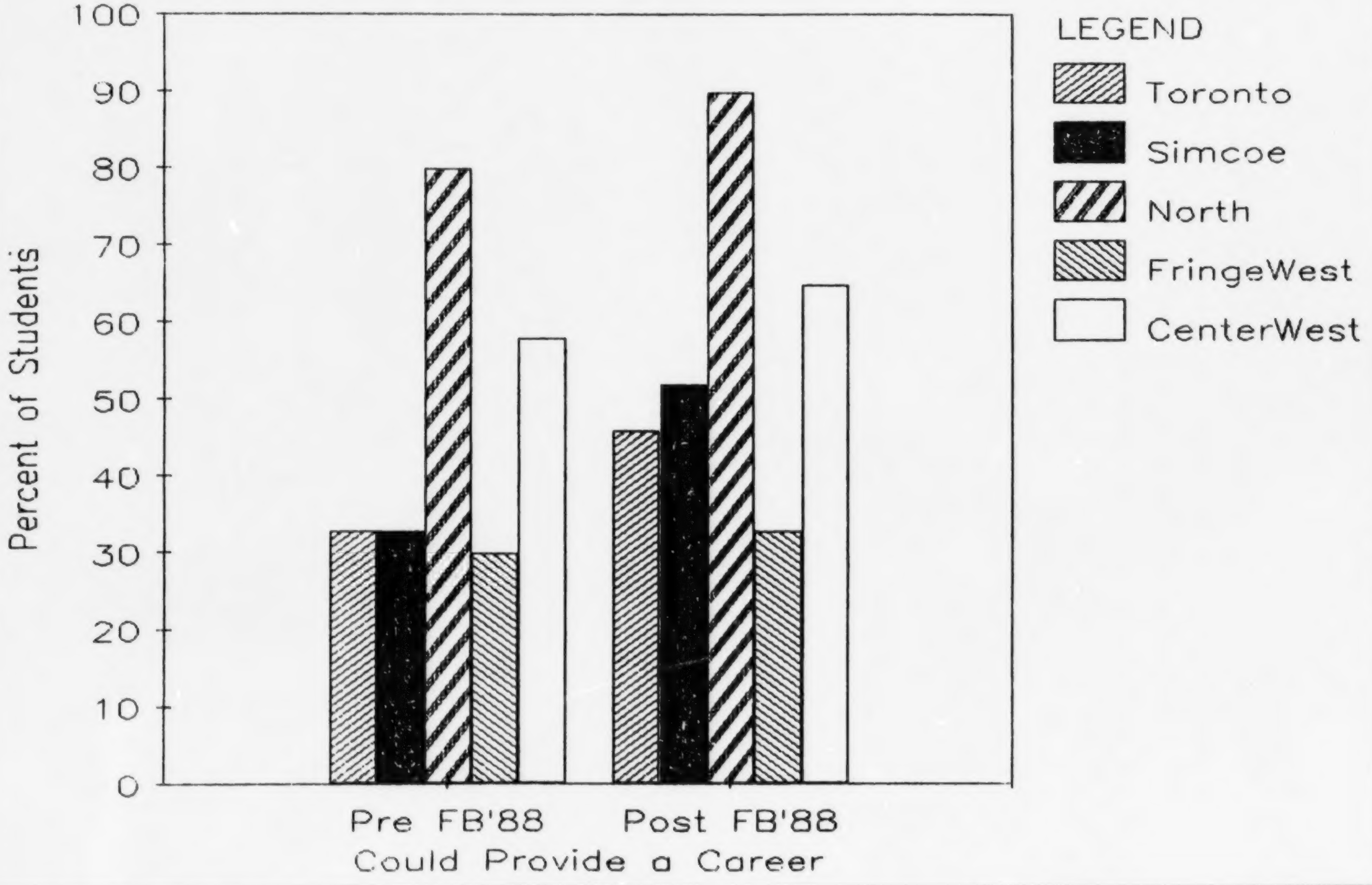


Assessment of Career Interests by Geographic Region (Pre FB'88)





Comparison of Geographic Areas: Would You Consider a Job in the Building Industry?



Comparison of Geographic Areas: Could the B.I. Provide a Career?

Please Note:
Copies of this report were provided to every senior-elementary and high school in the province of Ontario. Limited additional supplies are available through the Ontario Ministry of Housing.

APPENDIX E

BUILDING INDUSTRY CAREER INFORMATION

COPIES OF EACH OF THESE MATERIALS HAVE BEEN PROVIDED TO EVERY SENIOR-ELEMENTARY AND HIGH SCHOOL IN THE PROVINCE. LIMITED ADDITIONAL COPIES OF THE MATERIALS ARE AVAILABLE THROUGH THE ONTARIO MINISTRY OF HOUSING.

BUILDING INDUSTRY
CAREER INFORMATION

"Future Building '88" is over but not forgotten, especially by those who had a part to play in its success. It has become clear since its completion that it had a positive impact on the way our future labour force regards the building industry and the way the industry sees itself.

To capitalize on this success students were provided with more and better information about the building industry, but the responsibility for ongoing, personal communication with the future builders belongs to the educators and the industry itself.

Videos and other material have been sent to the schools and are available to building industry organizations free of charge. The following is a list of the material currently available:

"Build Your Tomorrow": is a humorous introduction to the building industry pitched to a younger audience. This was sent to all schools showing an interest in "Future Building '88" in March 1988 (22 minute Beta/VHS video).

"I Built That": the complete stage show from "Future Building '88". This is useful for motivation and to remove misconceptions and stereotypes about the industry (20 minute VHS video).

"Future Builders": two students explore "Future Building '88 and the possibilities in the building industry. This can be used in conjunction with the "I Built That" or alone for information and motivation. Two of the characters from the "DeGrassi Junior High" television show are featured (15 minute VHS video).

"The Wise Old Builder": computer software, MS DOS compatible, students type in interests and activities and receive information on relevant occupations. Approximately 50 occupational areas are described.

"Project Coordinator": computer software, MS DOS compatible, describes the job and its place in the building industry; identifies the flow of documents for which the position is responsible. This will be of more interest to the industry than to students.

"Contract Administrator": computer software, MS DOS compatible, describes the job and its place in the building industry; identifies the flow of documents for which the position is responsible. This will be of more interest to the industry than to students. Same format as "Project Coordinator.

"Future Building '88 - Impact and Future Directions: the Building Industry Secretariat was interested in measuring the effectiveness of "Future Building '88" in addressing the industry's concerns about labour force shortages. This was necessary to ascertain what future measures could be taken to encourage young people to consider the building industry as a career. The survey was to determine the outcome of attempting to modify the motivation and attitude of students toward the building industry at "Future Building '88".

"The Building Industry & Career Opportunities - Curriculum Guide": this package has been designed to enhance existing guidance curriculum in the intermediate (Grades 7-9) and senior (Grades 10-12) levels. The focus is on career options in Ontario's building industry and the intent is to motivate students to consider the building industry as a viable career option.

The Curriculum Guide provides stimulating and detailed activity suggestions within the framework of three core and one optional theme area. It is intended that the curriculum be presented over three classes.

"The Building Industry & Career Opportunities - Teachers Information Package": this package communicates accurate and positive material concerning the nature and status of the building industry, the career opportunities available in it and the normal routes to these careers. Each topic covered in the package is written in language appropriate to the Grades 7-12 level.

PLEASE NOTE

COPIES OF EACH OF THESE MATERIALS HAVE BEEN PROVIDED TO EVERY SENIOR-ELEMENTARY AND HIGH SCHOOL IN THE PROVINCE. LIMITED ADDITIONAL COPIES OF THE MATERIALS ARE AVAILABLE THROUGH THE ONTARIO MINISTRY OF HOUSING.

APPENDIX F

OVER 229 ACTIVE BUILDING INDUSTRY ASSOCIATIONS WITHOUT A COMMON VOICE!

OVER 229 ACTIVE BUILDING INDUSTRY ASSOCIATIONS

WITHOUT A COMMON VOICE!

ACOUSTICAL ASSOCIATION OF ONTARIO
401 Bay Street
Suite 2616
P.O. Box 36
Toronto, Ontario M5H 2Z5
(416) 868-1055

AMERICAN CONCRETE INSTITUTE
Ontario Chapter
c/o Bill Asselstine
2200 Yonge Street
Toronto, Ontario M4S 2C6
(416) 448-4411

AMERICAN INSTITUTE OF CONSTRUCTORS
Ontario Chapter
3218 Sir John's Homestead
Mississauga, Ontario L5L 2P1
(416) 926-1400

APPRAISAL INSTITUTE OF CANADA
Ontario Association
5468 Dundas Street West
Suite 330
Islington, Ontario M9B 6E3
(416) 231-7491

ARCHITECTURAL GLASS & METAL CONTRACTORS ASSOCIATION
c/o Toronto Construction Centre
1 Sparks Avenue
Willowdale, Ontario M2H 2W1
(416) 499-4000

ARCHITECTURAL MILLWORKERS OF ONTARIO
2742 Eglinton Avenue East
Suite 100
Scarborough, Ontario M1J 2C6
(416) 266-2490

ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA
4299 Canada Way
Suite 242
Burnaby, British Columbia V5G 1H3
(604) 438-6616

ASBESTOS WORKERS UNION LOCAL 95
3500 Pharmacy Avenue
Unit 1-B
Scarborough, Ontario M1W 2T6
(416) 493-1103

ASSOCIATION OF ARCHITECTURAL TECHNOLOGISTS OF ONTARIO
150 Consumers Road
Suite 407
Willowdale, Ontario M2J 1P9
(416) 493-6758

ASSOCIATION OF CHARTERED INDUSTRIAL DESIGNERS
Ontario Chapter
c/o Resource Centre
168 Bedford Road
Toronto, Ontario M5R 2K9
(416) 928-3069

ASSOCIATION OF MILLWRIGHT CONTRACTORS OF ONTARIO INC.
370 York Boulevard
Hamilton, Ontario L8R 3L1
(416) 525-3066

ASSOCIATION OF MUNICIPAL CLERKS & TREASURERS OF ONTARIO
100 University Avenue
Suite 801
Toronto, Ontario M5J 1V6
(416) 593-1400

ASSOCIATION OF MUNICIPALITIES OF ONTARIO
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Suite 805
Toronto, Ontario M5J 1V6
(416) 593-1441

ASSOCIATION OF ONTARIO LAND ECONOMISTS
1 University Avenue
Suite 502
Toronto, Ontario M5J 2P1
(416) 362-3666

ASSOCIATION OF ONTARIO LAND SURVEYORS
1043 McNichol Avenue
Scarborough, Ontario M1W 3W6
(416) 491-9020

ASSOCIATION OF PROFESSIONAL ENGINEERS (ONTARIO)
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Suite 101
Toronto, Ontario M4T 2Y5
(416) 961-1100

ASSOCIATION OF REGISTERED INTERIOR DESIGNERS
168 Bedford Road
2nd Floor
Toronto, Ontario M5R 1B1
(416) 921-2127

BARRIE CONSTRUCTION ASSOCIATION
c/o Barrie Chamber of Commerce
80 Bradford Street
Barrie, Ontario L4N 3A8
(705) 726-6573

BOILERMAKERS UNION LOCAL 128
7 Queen Elizabeth Boulevard
Toronto, Ontario M8Z 1L9
(416) 251-6585

BRICKLAYERS & ALLIED CRAFTSMEN
Union Local 10
52 Cranbrook Street
Kingston, Ontario K7M 4N2
(613) 384-2420

BUILDERS HARDWARE MANUFACTURERS ASSOCIATION OF CANADA
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Toronto, Ontario M5E 1J9
(416) 363-7261

BUILDING OWNERS & MANAGERS ASSOCIATION OF METROPOLITAN TORONTO
372 Bay Street
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Toronto, Ontario M5H 2W9
(416) 364-2767

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Ottawa, Ontario K2P 0R2
(613) 233-3474

CANADIAN ASSOCIATION OF EQUIPMENT DISTRIBUTORS
Ontario Group
6299 Airport Road
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Mississauga, Ontario L4V 1N3
(416) 677-0470

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Ottawa, Ontario K2P 0R2
(613) 233-3474

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P.O. Box 3312
Station D
Ottawa, Ontario K1P 6H8
(613) 594-3007

CANADIAN AUTOMATIC SPRINKLER ASSOCIATION
550 Alden Road
Suite 101
Markham, Ontario L3R 6A8
(416) 477-2270

CANADIAN BANKERS ASSOCIATION
P.O. Box 348
2-First Canadian Place
Toronto, Ontario M5X 1E1
(416) 362-6092

CANADIAN BOILER SOCIETY
c/o William Newby & Associates
5627 Main Street
Niagara Falls, Ontario L2G 5Z3
(416) 356-1341

CANADIAN CONDOMINIUM INSTITUTE
2949 Bathurst Street
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CANADIAN CONSTRUCTION ASSOCIATION
Manufacturers and Suppliers Committee
85 Albert Street
2nd Floor
Ottawa, Ontario K1P 6A4
(613) 236-9455

CANADIAN CONSTRUCTION ASSOCIATION
Construction Export Committee
85 Albert Street
2nd Floor
Ottawa, Ontario K1P 6A4
(613) 236-9455

CANADIAN CONSTRUCTION ASSOCIATION
Education and Training Committee
85 Albert Street
2nd Floor
Ottawa, Ontario K1P 6A4
(613) 236-9455

CANADIAN CONSTRUCTION RESEARCH BOARD
National Research Council of Canada
Montreal Road Laboratories
Ottawa, Ontario K1A 0R6
(613) 993-3761

CANADIAN CONSTRUCTION WOMEN
c/o Amalgamated Construction Association
2675 Oak Street
Vancouver, British Columbia V5H 2K3
(604) 736-6311

CANADIAN COPPER & BRASS DEVELOPMENT ASSOCIATION
10 Gateway Boulevard
Suite 375
Don Mills, Ontario M3C 3A1
(416) 421-0788

CANADIAN DOOR INSTITUTE
c/o P.O. Box 809
Tottenham, Ontario L0G 1W0
(416) 828-0054

CANADIAN ELECTRICAL ASSOCIATION
1 Westmount Square
Suite 500
Montreal, Quebec H3Z 2P9
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CANADIAN ELECTRICAL CONTRACTORS ASSOCIATION
161 Eglinton Avenue East
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Toronto, Ontario M4P 1J5
(416) 486-1290

CANADIAN ELECTRICAL DISTRIBUTORS ASSOCIATION
1470 Don Mills Road
Suite 303
Don Mills, Ontario M3B 2X9
(416) 446-1221

CANADIAN EXPORT ASSOCIATION
99 Bank Street
Suite 250
Ottawa, Ontario K1P 6B9
(613) 238-8888

CANADIAN FIRE SAFETY ASSOCIATION
2175 Sheppard Avenue East
Suite 110
Willowdale, Ontario M2J 1W8
(416) 492-9417

CANADIAN GAS ASSOCIATION
55 Scarsdale Road
Don Mills, Ontario M3B 2R3
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Ottawa, Ontario K1A 1G6
(819) 997-5635

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27 Goulburn Avenue
Ottawa, Ontario K1N 8C7
(613) 233-6205

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Suite 110
Willowdale, Ontario M2J 1W8
(416) 491-2886

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Ottawa, Ontario K2P 1L5
(613) 230-3060

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Suite 700
Toronto, Ontario M5G 2E8
(416) 595-5333

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5468 Dundas Street West
Suite 414
Islington, Ontario M9B 6E3
(416) 232-2600

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Toronto, Ontario M5G 1E2
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Suite 300
Willowdale, Ontario M2J 4G8
(416) 491-4552

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(613) 230-6262

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Ottawa, Ontario K1P 5G3
(613) 234-0505

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Ottawa, Ontario K1N 8C7
(613) 233-6205

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Ottawa, Ontario K2P 1L5
(613) 563-3520

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Suite 1400
Toronto, Ontario M5E 1J9
(416) 363-7261

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Suite 103
St. Laurent, Quebec H4M 2V2
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Ottawa, Ontario K1N 8C7
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Mississauga, Ontario L5N 2L8
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Ottawa, Ontario K1G 3T9
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(Ontario Chapter)
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Caledon, Ontario L0N 1C0
(519) 927-5852

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14th Floor
Toronto, Ontario M5E 1J9
(416) 363-7261

CANADIAN WELDING BUREAU
254 Merton Street
Toronto, Ontario   M4S 1A9
(416) 487-5415

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27 Goulburn Avenue
Ottawa, Ontario   K1N 8C7
(613) 233-6205

CANADIAN WOOD COUNCIL
55 Metcalfe Street
Suite 1550
Ottawa, Ontario   K1P 6L5
(613) 235-7221

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64 Signet Drive
Weston, Ontario   M9L 1T1
(416) 749-7440

CAULKING CONTRACTORS ASSOCIATION
c/o Toronto Construction Centre
1 Sparks Avenue
Willowdale, Ontario   M2H 2W1
(416) 499-4000

CELLULOSE INSULATION MANUFACTURERS ASSOCIATION OF CANADA
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499 Industrial Avenue
Ottawa, Ontario   K1G 3H7
(613) 521-9790

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Suite 200
Toronto, Ontario   M5H 2C9
(416) 368-2364

CENTRE FOR BUILDING SCIENCE
Department of Civil Engineering
University of Toronto
Toronto, Ontario   M5S 1A4
(416) 978-5053

CENTRE FOR BUILDING STUDIES
Concordia University
1455 De Maisonneuve Boulevard West
Montreal, Quebec   H3G 1M8
(514) 848-3210

CENTRE FOR INDUSTRIAL DEVELOPMENT
Ryerson Polytechnical Institute
350 Victoria Street
Toronto, Ontario   M5B 2K3
(416) 979-5042

CHATHAM BUILDERS EXCHANGE
P.O. Box 703
131 Queen Street
Chatham, Ontario   N7M 5K8
(519) 352-4790

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1 Sparks Avenue
Willowdale, Ontario   M2H 2W1
(416) 498-0217

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c/o Toronto Construction Centre
1 Sparks Avenue
Willowdale, Ontario   M2H 2W1
(416) 499-4000

CONCRETE FORMING ASSOCIATION OF ONTARIO
c/o Toronto Construction Centre
1 Sparks Avenue
Willowdale, Ontario   M2H 2W1
(416) 499-4000

CONCRETE RESTORATION ASSOCIATION OF ONTARIO
c/o Toronto Construction Centre
1 Sparks Avenue
Willowdale, Ontario   M2H 2W1
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857 North May
P.O. Box 2000
Thunder Bay, Ontario   P7C 4Y4
(807) 622-9645

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Suite 403
Mississauga, Ontario   L4V 1N3
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CONSTRUCTION INDUSTRY DEVELOPMENT COUNCIL
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7th Floor East
Ottawa, Ontario K1A 0H5
(613) 954-2970

CONSTRUCTION MANAGEMENT BUREAU
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Suite 200
Halifax, Nova Scotia B3R 1A9
(902) 429-6763

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Suite 901
Willowdale, Ontario M2M 3V3
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66 Tradewind Drive
Oakville, Ontario L6L 6A8
(416) 825-3749

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10th Floor
Toronto, Ontario M5C 2A5
(416) 366-1501

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Suite 1206
Toronto, Ontario M4V 1K6
(416) 922-3159

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86 Overlea Boulevard
Suite 403
Toronto, Ontario M4H 1C6
(416) 425-8027

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234 Eglinton Avenue East
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Toronto, Ontario M4P 1K5
(416) 481-6864

CONSUMERS' ASSOCIATION OF CANADA
Toronto Branch
330 Dixon Road
Unit 1401
Weston, Ontario M9R 1S9
(416) 247-5640

CORRUGATED STEEL PIPE INSTITUTE
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Willowdale, Ontario M2J 4G8
(416) 494-0661

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99 Bank Street
Suite 250
Ottawa, Ontario K1P 6B9
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COUNCIL OF ONTARIO CONSTRUCTION ASSOCIATIONS
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DURHAM CONSTRUCTION ASSOCIATION
627-A Wentworth Street East
Oshawa, Ontario L1H 3V8
(416) 728-3391

ELECTRICAL & ELECTRONIC MANUFACTURERS ASSOCIATION OF CANADA
10 Carlson Court
Suite 500
Rexdale, Ontario M9W 6L2
(416) 674-7410

ELECTRICAL CONTRACTORS ASSOCIATION OF ONTARIO
161 Eglinton Avenue East
Suite 605
Toronto, Ontario M4P 1J5
(416) 486-1290

EXPORT DEVELOPMENT CORPORATION
151 O'Connor Street
Ottawa, Ontario K1P 5T9
(613) 598-2500

FAIR RENTAL POLICY ORGANIZATION OF ONTARIO
869 Yonge Street
Suite 105
Toronto, Ontario M4W 2H2
(416) 961-3698

FIABCI - CANADIAN DIVISION
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Place de Ville
Tower A
Ottawa, Ontario K1R 5A3
(613) 234-3372

FIRE PREVENTION OFFICERS ASSOCIATION
c/o Markham Fire Department
8911 Woodbine Avenue
Markham, Ontario L3R 1A1
(416) 477-2011

FLOORCOVERING INSTITUTE OF ONTARIO
25 Clairville Drive
Rexdale, Ontario M9W 5Z7
(416) 675-4332

GRAND VALLEY CONSTRUCTION ASSOCIATION
25 Sheldon Drive
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GYPSUM MANUFACTURERS OF CANADA
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Mississauga, Ontario L4Y 1K1
(416) 252-5744

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370 York Boulevard
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HEATING, REFRIGERATING & AIR CONDITIONING INSTITUTE OF CANADA
5468 Dundas Street West
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Islington, Ontario M9B 6E3
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10 Gateway Boulevard
Don Mills, Ontario M3C 3N8
(416)467-3100

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Mississauga, Ontario L5J 8G6
(416) 822-8771

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(416) 623-7931

INTERNATIONAL BROTHERHOOD OF PLASTERERS & CEMENT MASONS
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Toronto, Ontario M4C 1L7
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INTERNATIONAL COUNCIL OF SHOPPING CENTRES
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Toronto, Ontario M5C 2C5
(416) 363-6615

INTERNATIONAL REAL ESTATE FEDERATION
Canadian Division
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(613) 234-3372

INTERNATIONAL UNION OF ELEVATOR CONSTRUCTORS
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Unit 6
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(416) 754-2424

INTERNATIONAL UNION OF ELEVATOR CONSTRUCTORS
Canadian Office
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Oakville, Ontario L6H 1L8
(416) 849-6288

INTERNATIONAL UNION OF OPERATING ENGINEERS
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Toronto, Ontario M4G 1Z4
(416) 425-8710

IRONWORKERS LOCAL 721
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KINGSTON CONSTRUCTION ASSOCIATION
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Kingston, Ontario K7L 4X1
(613) 542-9431

KINGSTON FRONTENAC HOME BUILDERS' ASSOCIATION
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(613) 389-2183

LABOURERS INTERNATIONAL UNION OF NORTH AMERICA
Local 597
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Whitby, Ontario L1N 2B9
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LONDON & DISTRICT CONSTRUCTION ASSOCIATION
280 Maitland Street
London, Ontario N6B 2Y6
(519) 433-3428

LOW ENERGY BUILDING COUNCIL
15 York Street
Penthouse 3
Ottawa, Ontario K1N 5S7
(613) 236-4594

LUMBER & BUILDING MATERIALS ASSOCIATION OF ONTARIO
4500 Sheppard Avenue East
Unit F
Scarborough, Ontario M1S 3R6
(416) 298-1731

MACHINERY & EQUIPMENT MANUFACTURERS ASSOCIATION OF CANADA
116 Albert Street
Suite 701
Ottawa, Ontario K1P 5G3
(613) 232-7213

MASONRY CONTRACTORS ASSOCIATION OF TORONTO
7501 Keele Street
Suite 102
Concord, Ontario L4K 1Y2
(416) 738-1733

MASTER INSULATORS ASSOCIATION OF ONTARIO INC.
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Mississauga, Ontario L4V 1T1
(416) 673-0004

MECHANICAL CONTRACTORS ASSOCIATION OF ONTARIO
7 Director Court
Unit 105
Woodbridge, Ontario L4L 4S5
(416) 856-0342

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505 Consumers Road
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Willowdale, Ontario M2J 4V8
(416) 491-9004

METAL TRADES ACCIDENT PREVENTION ASSOCIATION
2 Bloor Street West
31st Floor
Toronto, Ontario M4W 3N8
(416) 965-8888

METROPOLITAN TORONTO APARTMENT BUILDERS' ASSOCIATION
150 Consumers Road
Suite 402
Willowdale, Ontario M2J 1P9
(416) 756-9063

MULTIPLE DWELLING STANDARDS ASSOCIATION
163 Beechwood Avenue
Willowdale, Ontario M2L 1J9
(416) 449-7700

MUNICIPAL BY-LAW ENFORCEMENT OFFICERS ASSOCIATION
c/o Township of Delhi
P.O. Box 182
Delhi, Ontario N4B 2W9
(519) 582-2100

MUNICIPAL ENGINEERS ASSOCIATION
c/o County Engineers Office
County of Huron Court House
Goderich, Ontario N7A 1M2
(519) 524-7412

NATIONAL ASSOCIATION OF INDEPENDENT BUILDING MATERIALS DISTRIBUTORS
6681 Park Avenue
Montreal, Quebec H2V 4J1
(514) 271-8873

NATIONAL ASSOCIATION OF WOMEN IN CONSTRUCTION (OTTAWA)
85 Albert Street
Ottawa, Ontario K1P 6A4
(613) 236-9455

NATIONAL ASSOCIATION OF WOMEN IN CONSTRUCTION
c/o Prefak
49 Wellington Street East
Toronto, Ontario M5E 1C9
(416) 360-3745

NATIONAL CONCRETE PRODUCERS ASSOCIATION
1013 Wilson Avenue
Suite 101
Downsview, Ontario M3K 1G1
(416) 635-7179

NATIONAL ELEVATOR AND ESCALATOR ASSOCIATION
6299 Airport Road
Suite 403
Mississauga, Ontario L4V 1N3
(416) 678-9940

NATIONAL RESEARCH COUNCIL
Institute for Research in Construction
Montreal Road, Building M-20
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(613) 993-2480

NIAGARA CONSTRUCTION ASSOCIATION
34 Scott Street
P.O. Box 983
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(416) 682-6661

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Toronto, Ontario M4W 2N5
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Thornhill, Ontario   L3T 3S4
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Don Mills, Ontario   M3C 2G3
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(416) 482-5222

ONTARIO CONCRETE & DRAIN CONTRACTORS ASSOCIATION
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Downsview, Ontario M3J 2S4
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ONTARIO CONCRETE BLOCK ASSOCIATION
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(416) 630-9944

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Mississauga, Ontario L4V 1M3
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Don Mills, Ontario M3C 1Y8
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(416) 498-1897

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